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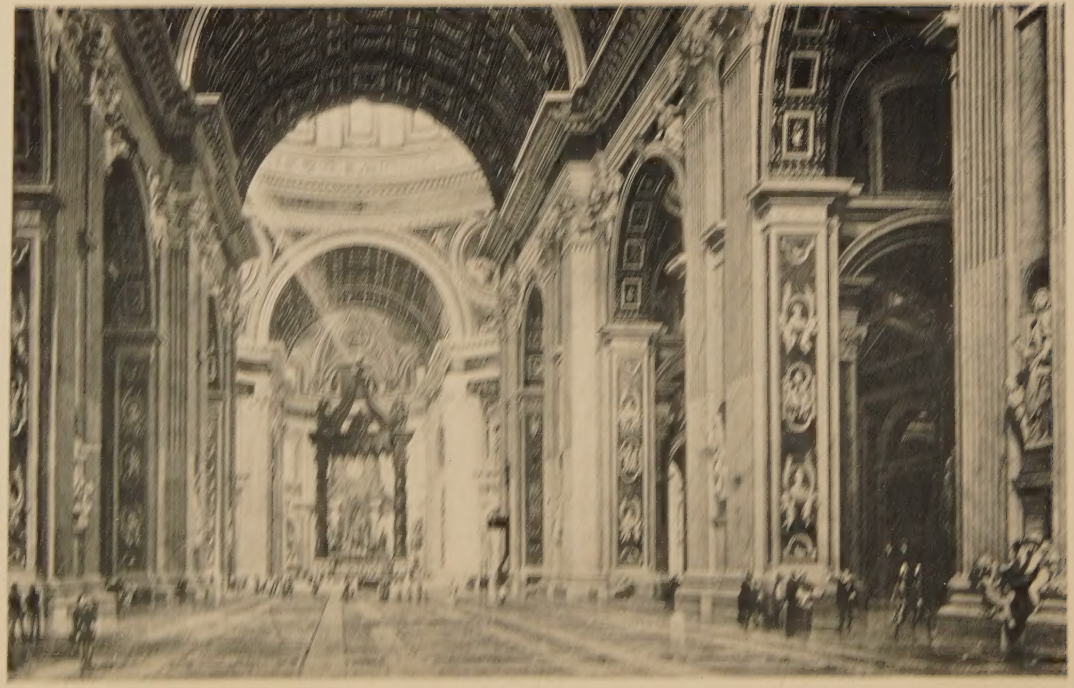


SAINT PETER'S, ROME, ITALY
(EXTERIOR)

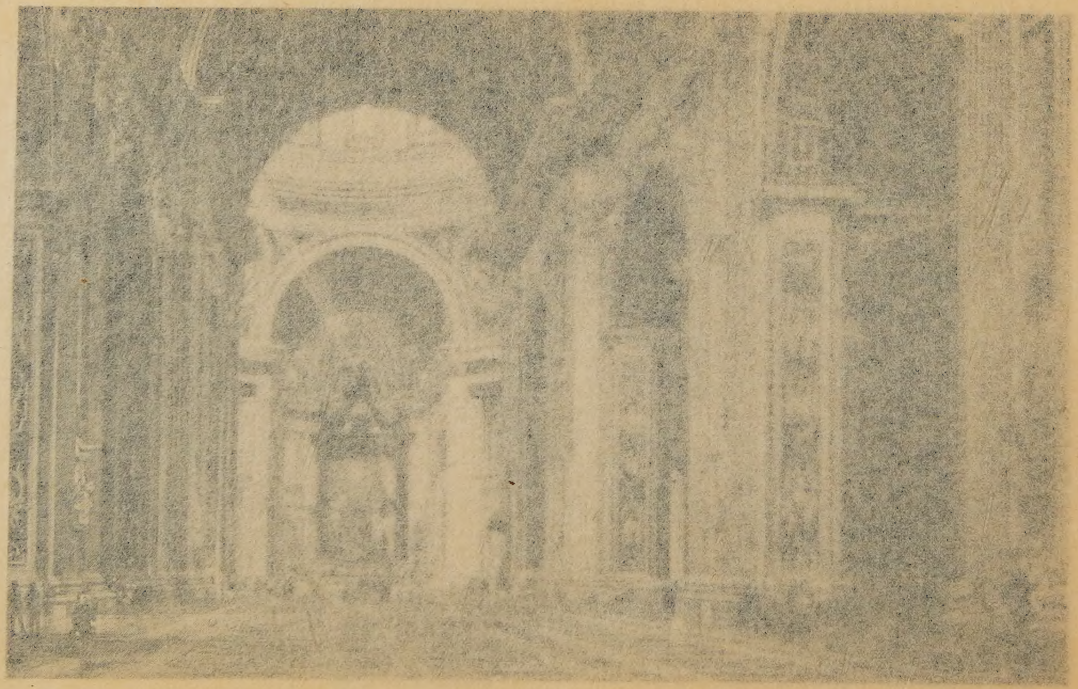
An example of the power of a simple coffered vault and simple, dignified, rhythmical design. The great size of every feature dwarfs somewhat the apparent size of the whole. *See pages 134, 218.*

THE ENJOYMENT OF ARCHITECTURE

BY
TALBOT FAULKNER HAMLIN

ILLUSTRATED

NEW YORK
CHARLES SCRIBNER'S SONS
1929



SAINT PETER'S, ROME, ITALY
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To H. B. H., M. F. H., and A. D. F. H. this book is dedicated with sincere gratitude for their constant aid and inspiration.

CONTENTS

CHAPTER		PAGE
I.	The Appeal of Architecture	3
II.	Laws of Form in Architecture	29
III.	The Architect's Materials	73
IV.	The Architect's Materials (*continued*)	111
V.	The Decorative Material of Architecture	137
VI.	The Criticism of Ornament	184
VII.	Planning	220
VIII.	The Meaning of Style	263
IX.	The Social Value of Architecture	298
	Epilogue	335
	Bibliography	337
	Index	341

List of Illustrations

Saint Peter's, Rome, Italy (Interior) ..... *Frontispiece*

OPPOSITE PAGE

Colosseum, Rome, Italy 22
Pennsylvania Station, New York City (Concourse) 26
United States Capitol, Washington, D. C. 32
Theseum (Temple of Theseus), Athens, Greece 40
Vendramini Palace, Venice, Italy 46
Cathedral, Amiens, France (Interior) 56
Public Library, Boston, Mass. 66
Panthéon, Paris, France 78
Santa Sophia, Constantinople, Turkey 90
Carlisle Cathedral, England (Two Bays of the Choir) .. 102
Santa Sophia, Constantinople, Turkey (Interior) 110
Santa Maria dei Miracoli, Venice, Italy (Interior) 116
Westminster Hall, London, England (Interior) 120
Pantheum, Rome, Italy (Interior) 126
Vestibule to the "Hall of the Two Hundred," Palazzo Vecchio, Florence, Italy 134
Cloister, Santa Maria della Pace, Rome, Italy 134
Tomb of Count Ugo, The Badia, near Florence, Italy .. 144
Cathedral, Lincoln, England (Interior) 150
Riccardi Palace, Florence, Italy 158
Water Leaf, Egg and Dart, and Anthemion from the Erectheum, Athens, Greece 170
Roman Acanthus Frieze from the Lateran Museum, Rome 170

Cathedral, Chartres, France (Transept Porch)..... 178
Cantoria, Formerly in the Cathedral, Florence, Italy.... 194
Post-Office, Eighth Avenue and Thirty-Third St., New York City..... 202
Door of the Escuelas Menores, Salamanca, Spain..... 208
Door of the Gardner-White-Pingree House, Salem, Mass. 212
Saint Peter's, Rome, Italy (Exterior)..... 216
Missouri State Capitol, Jefferson City, Missouri (State Stairway) 236
Opera House, Paris, France (Grand Stairway)..... 242
Château of Maisons Lafitte, France..... 284
Merchants National Bank, Grinnell, Iowa..... 294
Hunting Lodge, Clemenswerth, Germany..... 294
New Office Building, New York City.....330

LINE DRAWINGS IN THE TEXT

Fig.		Page
1	The National Gallery, London, England.....	35
2	Cathedral of Notre Dame, Paris, France.....	44
3	Cathedral, Chartres, France.....	49
4	Chapel	52
5	Old House in Kennebunk, Maine.....	84
6	Newton Hall, Near Cambridge, England.....	86
7	Cathedral of Saint Nazaire, Carcassonne, France...	100
8	Harvard House, Stratford-on-Avon, England.....	102
9	Gothic Ribbed Vaulting.....	129
10	The Pendentive.....	130
11	Mouldings	143
12	Temple Gateway at Karnak, Egypt.....	145
13	A Typical Classic Cornice.....	147
14	The Most Common Decorated Mouldings.....	151
15	Cornice from the Wing of Francis I Château of Blois, France.....	159

16 Capital from Southwell Minster, England..... 177
17 French Gothic Capitals..... 179
18 A House in New Haven..... 232
19 Missouri State Capitol, Jefferson City, Mo..... 236
20 Plans of Amiens Cathedral..... 248
21 Plan of a Library and Art Gallery..... 254
22 Plan of a Library and Art Gallery..... 256
23 The Final Solution..... 259
24 Two Possible Elevations of the Scheme Shown in Figure 23..... 260
25 Early Cypriote Ionic Capital..... 275

PREFATORY NOTE

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THE ENJOYMENT OF ARCHITECTURE

The Enjoyment of Architecture

CHAPTER I

THE APPEAL OF ARCHITECTURE

The days are swiftly passing when to the normal American art was valued as something distinctly secondary to the practical matters of life. We have grown into the precious heritage of appreciation, and music and painting and sculpture and literature bring us a real joy. But there is one enormous source of artistic pleasure of which too few are as yet aware; there is one art whose works confront us wherever man lives, which all too many of us daily pass blindly by. That source is to be found in the buildings all around us; that art is the art of architecture.

This blindness is the more strange since new avenues of pleasure are constantly opening to one who has even a slight measure of appreciation of architecture. To him a city is no grey prison, shutting him in from God and Nature; it is rather a great book on which is written

large the history of the aspiration, the struggles, and the constant striving for beauty of all mankind. To him a building may no longer be merely stone and brick and iron and wood; it may become vital with beauty, a symphony thrilling in its complex rhythms of window and door and column, enriching all who are willing to look at it appreciatively with its message of beauty or peace or struggle.

Architecture is of all the arts the one most continually before our eyes. To hear music at its best we must go to concerts or operas of one kind or another; to enjoy literature we must read, and read extensively; our best painting and sculpture are segregated in museums and galleries to which we must make our pilgrimages, but architecture is constantly beside us. We live in houses and our houses may be works of architecture. We work in office buildings or stores or factories, and they may be works of architecture. Nine-tenths of our lives are spent in or among buildings, yet how many of us feel a distinct warmth of pleasure as we pass a beautiful building? How many of us give one hour's thought a month to the beauty or ugliness, the architectural value, of the buildings

surrounding us? Wherever there is the slightest attempt to make a building beautiful, there is the touch of architecture, and if we pass by this touch unnoticed, we are by just so much depriving ourselves of a possible element of richness in our lives.

Architecture, then, is an art, and any art must give us pleasure, or else it is bad art, or we are abnormally blind: and to architecture as an art and the joy it brings we are too callous. It is the constant proximity of architecture during our entire conscious existence that has blinded us in this way. We forget that it is an art of here and now, because it is with us every day, and because we have to have houses to live in we are too apt to think of them solely as abiding places. Therefore we think of architecture as some vague, learned thing dealing with French cathedrals or Italian palaces or Greek temples, not with New York or Chicago streets or Westchester suburbs, and this fallacious doctrine has strengthened in us until our eyes are dulled and our minds are atrophied to all the beauty that is being created around us today, and we lose all the fine deep pleasure that we might otherwise experience from our ordinary surroundings.

This pleasure is of several kinds and comes from several different sources. Many of us have felt its call, and, unknowing, turned away, perhaps perplexed. We feel it vaguely, and accept it as something vague; with strange lack of curiosity we have never tried to find out why we choose some streets to walk on and shun others. We can be sure that this vague feeling, if it is real and worth while, will not die on analysis, like a flower picked to pieces, but will rather, as we examine it, take on definiteness and poignancy and be reborn in all sorts of new ways.

First of all among the pleasures that architecture can give is that which anything beautiful brings to an understanding heart, which warms the whole being, and sends one about his work gladder and stronger and better. Then there is the satisfaction that comes from the realization that a thing is perfectly fitted for the work it is to do, a satisfaction akin to that which the engineer feels in his locomotive, or a sailor in his vessel. There is, besides, the pleasure that comes from the fact that good architecture is always a perfect expression of the time in which it was built, not only of that time's artistic skill,

but also, if it is interpreted correctly, of its religion, its government, even of its economic and political theories. Still another pleasure arises from the perception of the specific emotional tone which each building sounds, from the austere power of an armory to the light playfulness of a good café. And last and greatest of all, the best architecture brings us real inspiration, a feeling of awestruck peace and reverence, a feeling of the immense glory and worthwhileness of things that comes only in the presence of something very great indeed.

All these different pleasures and more are open to one who will walk our streets with a seeing eye and even an elementary knowledge of what architecture is, what it is striving for, how and under what laws it works. And this knowledge we can each possess at a trifling cost of time and study, but to our great advantage. It is by examining these pleasures that we shall gain a clearer understanding of precisely what architecture is, and of how we can obtain such a knowledge of it as to enjoy it to the utmost with no lack of spontaneity in our appreciation.

The first kind of pleasure we have mentioned is that which comes to one from anything beau-

tiful. It is one of the hardest of all to analyze, for it is the deepest, and it goes so far into difficult questions of psychology that we can only give examples and analogies. This joy in the pure beauty of architecture is precisely similar to that in the pure beauty of music or painting or poetry, irrespective of the intellectual content of that music or painting or poetry. It is a pleasure primarily of the senses, but in the educated man it touches through this sensuous appeal an immense category of intellectual thoughts and emotions. It is a pleasure primarily exterior, but through exterior qualities it touches the deepest in us. It is a thing of rhythm, of balance, of form. It comes from the perception of anything which fulfills certain innate laws of beauty that are well nigh universal. It is irrespective of styles, even of critical discriminations; a man feels it in looking at the Parthenon, at the Cathedral of Amiens, or at the Capitol at Washington. He may feel it as thrillingly in a colonial farmhouse or in an apartment hotel as in a great cathedral. The confirmed modernist in music, if he is at all candid with himself, feels it in a Bach fugue; the confirmed secessionist in painting feels it in

the glorious composition of a Tintoretto or the blazing colour of a Rubens. It is a universal pleasure, the capacity for which is inborn in every normal person, and it is always aroused by the perception of anything which fulfills certain requirements of form for which the mind is constantly athirst. It is the satisfaction of this thirst that is at the very basis of all artistic pleasure, and it will, therefore, be necessary to understand at least the fundamentals of these requirements of form in order to have any real intelligent appreciation of architecture.

The next pleasure which architecture gives us arises from the perception that a building is supremely suited to its purpose. Everyone has at some time been irritated by a house, which, though beautiful, was nevertheless so built that the kitchen odours penetrated everywhere; or, perhaps, by a theatre full of charm and colour where one could not hear; or by a city hall where every office which one seeks seems at the far end of long and tortuous hidden corridors. In buildings such as these the architect has failed, at least partially, and the irritation arises as much from his failure as from its actual effects. On the other hand, there is

always a soothing satisfaction in a library where the appearance of the building itself expresses what use each part serves; or in a station where entrance leads to waiting room, and waiting room to ticket office, and ticket office to trains, direct and clear. There is a somewhat similar satisfaction about a bridge where every stone and every girder seems to do its work perfectly, with each smallest part necessary. The satisfaction that one feels in buildings like these is entirely due to the architect's success in solving his problem economically and well, because architecture must always be based upon the most careful consideration of the practical needs of our complex life.

For architecture is a science as well as an art, and the architect must not only build beautifully, but he must see that his buildings are strong and durable and efficient, to be proof against the weather, and to fulfill all the practical purposes for which they were built. Good architecture must, therefore, be always sane and practical. Architecture is not only an art of cathedrals and tombs and monuments—though even these must be built to stand and endure—but it is also an art that deals with

every phase of the most ordinary businesses of men. Our houses must be as convenient and as roomy as possible. Our office buildings must be economical, with the greatest possible renting space, and they must be provided with all the necessary elevators and toilet rooms and heating apparatus. Our factories—for even factories should be architectural—must have fresh air and floods of light, and be so constructed as to minimize noise and vibration. Our theatres must be so arranged that from every seat there will be an unobstructed view of the stage, and no echoes or undue reverberation to destroy the sound, and so planned that in case of accident the theatre can be emptied in the shortest possible time.

When one considers that architecture embraces every one of these points, and more; that plumbing and heating and electric wiring and ventilation and the design of steel columns and girders all come under its control, it is not likely that he will accuse it of being an art esoteric and aloof. Indeed, it is of all the arts the one that touches life at the greatest number of points; the architect must always be in our midst, hard-headed, clear-thinking, careful, to

fill our daily needs, whatever they are; to build dwellings and shops and railroad stations and factories and theatres and churches; to see that each is as useful and as convenient as science can make it; and then to crown it with beauty, to be a constant delight.

There are always these two factors in good architecture, the practical and the beautiful, the scientific and the artistic; and the great architect must be both dreamer and engineer. Indeed, it is from the constant interreaction of these two sides of architecture that its peculiar value arises. For instance, an architect may have æsthetic ideals which would, left to themselves, work out into thin delicacy, or an anachronistic grandeur, or in some other equally fantastic way. When such an architect comes actually to design a building, he is instantly confronted by such a host of intensely modern necessities that the final result must be modern, must be expressive of his own time and his own nation.

Let us look for an example of the results of the interreaction of these two qualities in the chaotic mass of buildings that crowd the lower end of Manhattan Island. There are simple,

square, many-windowed boxes, colossally ugly; there are granite bank buildings, superbly dignified; there are great towers standing high, some lovely with intricate carving and spiky pinnacle, some more severe, with mighty column and bold cornice; and around the skirts of the big business buildings there are massed the low and dingy tenements, shadowed and drab. Each one of these various structures is a complex whole embodying within itself all the thousand factors of our lives which it is meant to serve; each building has a form and a character directly determined by some of the myriad needs of our many-sided civilization. The result is a group of buildings entirely expressive of our national spirit. Look at the dauntless daring of those soaring towers! Notice the way the decorative motives have been borrowed from all the past; in one place the plaid of windows is overlaid with the lacy Gothic of France, in another are piled high the stately columns of Greece and Rome, in still another the pyramid of Egypt, plumed with fleecy steam, rises strongly in the air. It is all, indeed, a complete expression of this nation's youth, of its debt to all the past, of its exuberant vitality, of

its respect for wealth and its ostentation, of its young idealism, of its chaos and its faults and its sentimentalities. And on an autumn evening, when the white towers loom pink in the afterglow, and lights are twinkling in the windows, and the October haze lies purple over all, it is passing fair, radiant with a beauty due not only to the soft and shimmering atmosphere, but also to the effort of our builders and the skill of our architects.

It is significant that these buildings are almost entirely commercial buildings of one kind or another. It is not likely, therefore, that they are wild dreams of an unfettered imagination; that their beauty has no grounds in our real and everyday life. The men who have spent the enormous wealth necessary to produce them are not the kind of men one would expect to sink their millions in any scheme that was not economically sound. Indeed, one element of the unique beauty of all these mighty buildings lies in the fact that their entire form is the direct result of the particular needs of the activities which they house. Their character, in other words, is produced by the two-fold character of architecture; for the attempt of the architect to

produce a building which shall perform its work in the most efficient possible manner determines many points of the building's general shape, and his desire to create a thing of beauty compels him to treat this shape in the most beautiful possible way, and to decorate it with the loveliest forms at his command.

It is the combination of these two qualities which has produced this result, in the case of these buildings on the lower end of Manhattan Island so uncannily expressive of our American life. And architecture, because of this twin basis in practical needs and æsthetic idealism, has always been the art which most completely expresses the life of the people who produce it. In this fact lies the next pleasure one may obtain from architecture, the pleasure of reading in buildings the whole history of mankind, its struggles, its ideals, its religions. In the rise and fall of Roman architecture one may read the rise and fall of the Roman power, and in the continual use of Roman decorative forms for the last five hundred years one may feel some small measure of the powerful influence which the Roman genius has exerted throughout the world. Similarly, the architecture of

the modern countries is a revelation of their development; in the careful and painstaking but uninspired and frankly imitative buildings which the English loved to build a hundred years ago there is a fine expression of the smugness and of the lack of originality that characterized the birth of English industrialism, and in the gradual development from a common heritage into the diverging and divergent national styles of today there is a concrete evidence of that tremendous development of nationalism which has been such an important feature of European history during the last century—a development which bore such terrible fruit in the summer of 1914.

In architecture, then, always keenly conscious of the influence of the past, yet always supremely expressive of the present, there is a continuous and vivid commentary on human existence. Whether in the inscrutable immensity of the many-columned temples of Egypt, or in the virile delicacy of the refinement of the best Greek work, or in the rich and powerful splendour of Roman thermæ, or in the mysterious aisles of a Gothic cathedral, or in the free gaiety of a modern French theatre, or in

the rugged, almost ruthless power of some of the recent German monumental work,—in all of these one with a seeing eye may discern the fascinating tale of national characters and their aims and struggles. What a treasure house of broadening and cultural knowledge architecture becomes when it is seen in this light! Every building becomes eloquent of its own day, and of all its background in the past. Of course it is only the archæologist and the careful student of styles and history who can enjoy this pleasure to the greatest extent, but it is a simple matter for anyone to learn about the principal styles, how they arose and why they grew or died. Moreover, there is all the lure of romance in any such study of architecture, for it peoples the great monuments of the art with all the pageantry of the fascinating past. A true appreciation of architecture can only be gained by always studying it in relation to the history of the people who produced it, and to one gifted with such an appreciation every city becomes a living history of the past and the present, and sometimes even an indication of the future.

Another pleasure to be derived from architecture is that which comes from the perception

of a building's emotional tone. For architecture is an emotional art, as truly emotional as music or painting or poetry. As an art it must have this emotional tone. Too often we forget this, and in such architectural appreciation as we attempt, we adopt an attitude strangely cold and intellectual. It is hard for the average man to conceive of anything whatsoever emotional in stone and steel and cement. Because architecture cannot tell stories or represent actual events, because it cannot work as directly on our sympathies as words or pictures, because (and perhaps this is the most important of all), although there are love poems and love stories and love pictures and love music, love architecture is inconceivable—because of all these things we forget that there are a great number of emotions which architecture can express, and express with all the greater poignancy because of the abstract means at its disposal.

This poignancy is the result of the fact that in architecture the *form,* that is, the element which acts directly upon the eye, and the *matter,* that is, the element which acts upon the spirit or intellect, are so inextricably intertwined. Walter Pater, in his essay on the School of

Giorgione, says that all art is constantly aspiring to the "perfect identification of form and matter." Music, in his opinion, is the art which most perfectly realizes this ideal. "In its ideal, consummate moments, the end is not distinct from the means, the form from the matter, the subject from the expression; they inhere in and completely saturate each other; and to it, therefore, to the condition of its perfect moments, all the arts may be supposed constantly to tend and aspire." It is precisely in this matter of the identification of the form and the matter, the subject and the expression, that architecture is most closely analogous to music. Architecture has been called "frozen music," not because of any mystical similarities between musical forms and architectural forms, or between musical rhythms and architectural rhythms, but because in both great architecture and great music it is impossible to conceive of the existence of the matter apart from the form. In this regard these two arts stand alone. For instance, the landscape or the figures which the painter paints have a real and definite existence outside of the artist's work, and the same landscape under the same atmospheric conditions, or the

same figures posed in the same positions, would produce emotions at least partially the same, no matter how treated. But in architecture or in music, if the form is removed, the emotion which the form expresses is at once destroyed as well. A simple concrete example will show the truth of this assertion. Imagine a lofty-aisled Gothic cathedral. The light, mellowed by the glowing colour of the stained glass windows, is rich and soft; high piers soar up to the arching vault in the shadows overhead; on distant altars at the ends of long vistas through clustered shafts candles burn with a warm radiance; and the effect upon the beholder is an overpowering emotion of peace and quiet, reverent awe. Then imagine a church architecturally amorphous; take away the stained glass, the clustered shafts, the pointed arches, the shadowed vault—the emotion has fled with them, for it is inherent in them, its existence is one with their existence, and the poignancy of the effect is directly due to this complete identification of the emotion with the forms which produce it.

It is true that the number of emotions which architecture can produce is limited, but those which it does arouse are usually of the highest

and most beneficial kind. There is the impression of immense power, for instance. Surely everyone has felt it at some time in the presence of some great building; perhaps in the sunny courts of Thebes or Karnak, perhaps before the mighty vaults and serried arches of the Roman Colosseum,* perhaps under the high roofs of Rheims or Westminster, perhaps, as one hurried through the narrow streets of lower New York, when he suddenly saw rising before him the massive arches of Brooklyn Bridge. It is a sort of fine pride, externalized and purified, a consciousness that in these, at least, mankind shall live; that these, at least, of his works shall endure and stand, as so many have, their thousand years and more. This sense of power is one of the commonest and most obvious of the architectural emotions, because all really good buildings should have it to some extent. There is something of permanence in every building; building materials themselves—stone and brick and tile and well-worked wood—if properly treated, will give this impression; it only remains for the architect to use them in a simple and expressive way, and his building will appear strong. Moreover, it is an emotion that is

* See the Plate opposite page 22.

dear to the heart of all mankind, for it serves to mitigate, at least to some degree, the much hidden but all pervasive sense of the poverty and the futility of the individual life.

Another emotion which architecture can produce is the emotion of peace, an emotion more subtle than the sense of power and more beneficent. Where heavy weight is strongly supported, where there is simplicity in design and a careful harmony of proportion, there is always a source of repose; there is always a subtle influence making for rest. One may at any time see a small crowd of people sitting around the base of the Boston Public Library, resting. People hurrying to or from the subway across One Hundred and Sixteenth Street in New York will suddenly check their pace, confronted all at once with the imposing simplicity of long, white steps backed with the green of trees, and crowned with the wonderful colonnade of the Columbia Library. Indeed, wherever there is a really beautiful building in a little open space one is likely to find people slowing their hasty walk, sitting down if they can, resting. And why? Because there the mind of the architect has been at work; there good architecture is

COLOSSEUM, ROME, ITALY

Strongly marked horizontal and vertical rhythms make this building one of the most impressive monuments which the Roman Empire has left. See pages 56, 202.

pouring over them the continuous blessing of its peace.

There are lighter and more concrete emotions, too, which have their place in architecture. The architect can express gaiety, playfulness, relaxation, as well as the musician or the painter. There are theatres, for instance, that invite the passerby to enter; with gay colour and exuberant ornament they seem to give promise of a feast of enjoyment within. The best of these amusement places seem almost vocal, so full of a gay abandon are they. Our exhibition architecture has a large amount of this quality, and certain portions of the San Francisco Exposition of 1915 were like solidified laughter. We must always remember that the architect is only a man; he need not always be solemn, nor need he foreswear gaiety, provided only that he make his gaiety beautiful.

All good architecture should have this gift of expressiveness. Every building, every well-designed room, should carry in itself at least one message of cheer or rest or power. One should always study the buildings around with this in mind. Soon some will take on new values; whatever they are they will become vital

with their message; and a great number of others will remain as before—vague, grey, lifeless things. In the buildings which seem alive with some message the architect has succeeded; they are true works of art. All the others may not of necessity be actually very bad in design, but they are never great, for their architecture has failed in one of its most important duties.

By far the most important of all the pleasures which architecture can produce is the deep joy of true and noble inspiration: that big sense of awe and reverence that comes only when something has struck deep at the foundations of our souls. It is the feeling that thrills one as he enters from a blustering autumn day into the dim, tremendous quiet of Notre Dame at Paris; it is the joy which sings in the gorgeous glow of the richness of Saint Mark's at Venice. It is most frequently associated with religious buildings, such as Saint Peter's in Rome, or Westminster Abbey, or some of our own great churches, but it is by no means confined to them. Nor is it limited to buildings of large size. It can come from small structures as well: for it would be a cold person, indeed, who did not thrill as he turned a corner in Athens and suddenly saw ris-

ing in front of him out of squalid slums the little Monument of Lysikrates, so delicate, so perfect, so shining with a candid purity in the midst of all that drabness.

This inspirational quality is as independent of a building's age as it is of its size; it is a result of perfection, and it may exist in a building a year old as strongly as in one a thousand times its age. When one lifts the leather curtains of the door of Saint Peter's, and enters for the first time the hushed immensity of its great interior,* the inspiration of its nobility sweeps over one like a compelling tide; but exactly the same emotion may overwhelm one in the concourse of the Pennsylvania station in New York—that great strong-vaulted interior which swallows up its crowds and stills their tumult, and dignifies them.† It is a thrilling feeling of awe, a reverence for God and man, a sudden keen realization of the worth-whileness of life and the smallness of the individual.

Architecture has always this crowning revelation as its end, and when it strikes this note it has succeeded in saying its greatest word. When, as you stand before some building, or in

* See Frontispiece.
† See the Plate opposite page 26.

some grand interior, you feel rising within you this wave of thrilling inspiration, this emotion of quiet reverence, then you may rest assured that you are in the presence of something truly great, a veritable architectural masterpiece. Such a joy as this can never be taught or learned; for just as it takes giants to design buildings that produce it, so those alone can appreciate it fully who keep their souls unspoiled and sensitive and their sensibilities alert and keen, those who know what faith and reverence are, and who have not lost amid the turmoil of modern life the thin clear music of the soul's singing.

These, then, are the gifts which architecture is always ready to give you freely, will you but keep your minds active and your eyes open. Begin at once, whether you think you know anything about architecture or not. Study the building you work in and try to decide whether it pleases you, and why. As you leave your home, look back, and see if it is a residence you are proud to live in; if it expresses in some way the joy you feel in returning to it; if it looks inviting, comfortable, homelike, beautiful. And on your daily business, wherever it may take

PENNSYLVANIA STATION, NEW YORK CITY
(CONCOURSE)

(Copyright by W. Irving Underhill, N. Y.)
Thoughtful and imaginative design makes this modern interior instinct with noble inspiration. See page 25.

you, by library or school or apartment house or church or farmhouse or villa, look at them, be they good or bad, with a new interest, and know that in them, and in the emotions they arouse in you, there is an immense store of vivid and broadening pleasure awaiting your enjoyment. As you do this, there will gradually grow over you a grey feeling of fatigue and displeasure when you pass street after street of thousand-windowed boxes with rusty tin cornices atop and horribly ornamented hallways below—the homes of thousands upon thousands of city dwellers—or you may feel a glow of pleasure or quiet rest or even awe where some really beautiful building rears its walls.

When even this measure of appreciation is yours, you may know that you have begun to open the great book of architecture, and every successive page you will find filled with more and more of interest and value. And the pleasure you get from your growing appreciation will not be its only result, for you have joined the continually growing number of those who realize the enormous value of good architecture, and in the place of the terrible architectural blunders of which we have been too often guilty,

demand architectural masterpieces. Thus you will be helping in the task of the gradual raising of the standard of our national taste, and so adding to the health, the happiness and the spiritual enrichment of yourselves and the Americans of the future.

CHAPTER II

LAWS OF FORM IN ARCHITECTURE

THERE is no greater obstacle to the appreciation of architecture than the fog of criticism that hangs all about it. The architects themselves are largely to blame for this. Forced to close contact with its infinite complexity, they have been so occupied with questions of style and of structure that their minds have become obsessed with these, to the almost complete neglect of the broad, basic criteria of criticism which underlie all styles and all methods of construction. The critics have in general followed in their steps. There are histories of architecture galore, and books and lectures supporting this, that, or the other style; but the amount of serious and simple architectural criticism has been small indeed. Conditions have improved little even in this critical and self-consciously discriminating day. A few books there have been that strove to pierce the fog and show the real values of a building, but in too many cases an

attempt at broadmindedness with regard to styles has led to an almost complete lack of any discrimination whatsoever. The popular magazines devoted to building and landscape gardening murmur through an intellectual vacuum of the charm of this or the charm of that, and beautiful photographs strive in vain to take the place of real criticism in telling the reader what is good and bad in architecture.

For there is a good and bad in architecture as in all the arts. Popular taste may wax and wane; it may demand now Gothic arches and now Greek columns, but beneath all this change there is a substratum of what seems to be universal law. Architecture, as an art of form and colour, can as surely be criticised according to the approved laws of form and colour as any of its sister arts, and it is on these laws that all criticism of architecture must be based.

It is not our purpose to go into the origin of these laws. That is the concern of the psychologist and the philosopher. Whatever may be their basis, the fact remains that certain laws seem to be followed by all works of painting or sculpture or architecture that the consensus of opinion of mankind has judged beautiful. Not

only are these laws deducible in painting and sculpture and architecture, the arts of form and colour, but the working of the same laws, or laws closely analogous to them, can be found in the arts of sound—in good literature and good music. They seem to be general rules, in accordance with which a man's mind always works when he strives to create something which shall have that quality which makes it pleasing to his senses—the quality of beauty, or when he tries to think about that which has appealed to him as having this quality.

The first of these laws is so universal and so important that compliance with it has often been recognized as the sole necessity of beauty. Pythagoras and Aristotle voiced it in Greece over two thousand years ago, and almost every philosopher since has recorded it and restated it when dealing with the subject of beauty. Beauty, according to these authorities, is a characteristic of any object composed of varied elements that produces a unity of effects upon the sensations of the beholder. It sounds simple enough, this formula, but as it is examined, its meaning will become so full, and so far-reaching, that the simplicity of the phrasing

will seem deceptive. Even so, this definition covers only a small part of the whole field of what men call beautiful; it neglects the entire emotional and associative value of beauty. It considers beauty merely as an external quality, as a matter purely of the senses rather than of the heart. Allowing all the onesidedness of this definition, however, it will still be necessary to discover its meaning and its application to architecture, particularly as we are dealing in this chapter with architecture purely as form.

What is unity? Unity is the quality of an object by which it appears as definitely and organically one single thing. It is possessed by any building that at once strikes the beholder as a single composition. No matter how complex the parts of a building may be, or how large the whole, if the complex parts at once take their place as component parts of the whole, the building is unified, and is thus far a good building. As an example of a complex yet unified building, take the Capitol at Washington.* The Capitol was built at several different periods, with several quite distinct parts—the two end wings, the central block, the portions that connect them, and the dome, and with each part

* See the Plate opposite this page.

UNITED STATES CAPITOL, WASHINGTON, D. C.

Unity is given to this complex building by the dominance of the dome and the similar treatment of similar motives wherever they occur. See pages 32, 89.

itself composed of many varied elements—columns, windows, doors, pediments, balustrades and so forth. Each of these, in turn, might be analyzed into its own several elements, mouldings, spots of bright light and shade, carved ornament, until the building is seen to be composed of thousands of pieces of carved or cut stone, and myriad openings through the stone, each stone and each opening contributing its own special note of dark or light to the whole. Nevertheless, in spite of all this tremendous complexity, this enormous number of differing parts, when the whole is seen, there is no sense of confusion, of multiplicity; there is, on the contrary, only an impression of great size and impressive dignity, even of simplicity, and the great dome above seems to bind the whole into one mighty composition. The skill of the architects who have worked successively on the building has been equal in each case to its task. By keeping the main lines simple, and by judicious repetition of the main motives—pediments, colonnades, and steps—these architects have succeeded in making a unity out of complexity, and so have produced a building that fulfills perfectly the first and perhaps most important re-

quirement of beauty. It is a living expression in stone of our country's motto, *"E pluribus unum."*

And yet how easy it is to lose this precious touch of unity! In New York there has been recently built a costly and lavish office building with a façade composed of eight stages of Ionic colonnade, with three stories to each stage. The material of the front is rich and simple, the execution is nearly perfect, the ornament is graceful and well applied. Even the Ionic columns and their entablatures are in themselves beautiful, studied and refined to the last degree. At first thought it might occur to one that this repetition of the same motive would give unity to the building, but in reality, how different is the case! Far from giving the building unity, this repetition of the same order, stage on stage, produces a monotonous and ostentatious confusion, and the building, sawed into pieces by the strong cornices that cut across it at each three stories, appears not one but several buildings, piled interminably one on the other. It is, therefore, a building that lacks the saving grace of unity, and however charming its detail, and lovely its parts, as a

whole it fails of beauty. This failure is made all the more evident by the contrast with the charming simplicity of the colonial Saint Paul's Church beside it, with its simple lines, its dignified colonnade, and its graceful spire.

THE NATIONAL GALLERY, LONDON, ENGLAND.

FIG. 1. Multiplicity of motives, and dissimilarities in their treatment, destroy the unity of this building.

As an even better example of the loss of unity and its disastrous results, take a still simpler building, the National Gallery in London. This building is particularly suited for comparison with the Capitol at Washington, because it uses so many of the same motives —domes, columns, and a pediment. Indeed,

it has fewer motives and simpler elements. In place of the many windows of the other building, it has long stretches of cut stone wall, the strongest and most dignified form in architecture. Yet, even with this simple and dignified series of forms at his disposal, the architect has failed to give unity to the building. In place of the great dome of our national Capitol there is a small excresence above the main entrance, a dome so small in size and so puny in design, that it becomes, not the building's crowning glory, but rather an ugly superfluity, a useless appendage that instead of binding the whole building together by its compelling grandeur, seems only to add to its confusion. The same lack of appreciation of unity, the same indecision, appears in the whole front. Standing, as it does, at the head of a great square, one of the most important in London, this building ought to have a magnificent dignity. In reality, its central eight-columned portico is small and meagre in effect, and its pediment above too low; like the dome, it completely fails to centre one's interest, or even adequately to suggest its purpose. On either side of its ineffective columns the design is still worse. On either side

there is a stretch of wall, and then a sudden ornamented projection with columns and cornice, as if the wall were to end here, in this strongly marked end pavillion. But no, beyond it stretches on, to fade away in another pavillion similar to the first but much weaker, and still further beyond it appears once more in a third and final pavillion, the weakest of all, the indecisive close of an indecisive building. Despite the simplicity of its motives, the building is a hodge podge—wall, pavillion, wall, pavillion, ineffective and meagre entrance, puny and insufficient dome; and because of its lack of unity, this home of one of the world's greatest art collections is a building that laymen pass by without a second glance and that architects think of with scorn.

All these buildings, good and bad, have a certain amount of complexity, and they must have this complexity, not only for practical, but for æsthetic reasons as well. Absolute unity, were such a thing possible, might excite wonder, amazement, awe, but never that pleasure that is one of the signs of beauty. For instance, let the reader think of that monument of prehistoric effort, Stonehenge. If it is beautiful, it is

beautiful only in so far as it has complexity. Where the lintel stones remain in place, the result is more beautiful than where only the upright piers are left; where several of these stand side by side, in some semblance of order, the result is more beautiful than where one is left upright, alone, forbidding. The simplest obelisk is beautiful, not because of its simplicity, but because of the subtle relationships between the several parts of it—the width at the base, the width near the top, the slope of the sides, the relations between the height of the pyramidal part at the top and the part below. There is great complexity of form in an obelisk, simple as it appears, and complexity in æsthetic discussion always refers to complexity of form, not of function or number. Let the reader try to imagine something totally without complexity, as large or small as he pleases. It is impossible; on the one side is the geometric point—a pure abstraction, and surely not beautiful—on the other, infinity, equally an abstraction, equally unbeautiful. The nearest approach to such a concept possible to the human imagination is conceivably a huge, colourless sphere, hanging in nothingness. Surely that would

not excite the pleasurable warmth of beauty in one. The feelings at such a vision realized might be feelings of fear, or awe, or wonder, perhaps even of religious reverence, or terror, but beauty has flown, for there is little of beauty in the purely abstract.

Unity and variety, then, are both necessary to beauty, in architecture as in everything else. Variety is absolutely necessary in architecture; the architect need not be concerned over that. A host of practical requirements necessitates windows, doors, chimneys, porches, roofs. The disposition of the rooms and several parts of even the simplest building requires projections or variations of the exterior. Even in tombs or commemorative monuments inscriptions and ornament necessitate a certain complexity. It is, therefore, impossible for any architect to design a building without complexity. It is the binding of all the various units into a single work that is his greatest æsthetic problem, the correlating of all, so that each shall perform its required æsthetic service, so that each shall bear its proper relationship to every other, and to the whole work. How, then, may he do this?

The best way to answer this question, so im-

portant to one who attempts to appreciate architecture, as well as to the designer, is to find out the dominant qualities that are common to all beautiful and unified buildings. This has been often done, and the results have been so uniform that they have been codified into laws, or perhaps more really, rules of artistic composition. If they are once understood and applied, sound criticism is the inevitable result, so it is necessary that they be carefully considered. They are, in brief, the laws of balance, rhythm, good proportion, climax (centre of interest), and harmony. Some people would add grace to the list, but it is better to consider grace as a result of the working of the other rules. Strangely enough, these laws or rules, deduced from good buildings, are practically the same as the laws that govern good literature or good music; that seems sufficient commentary upon their validity. One might write a book of rhetoric based upon them, or a book on musical composition, but it is their application to architecture that is of first interest here, so that time will be well spent in investigating them in detail and considering them in all their architectural implications.

THESEUM (TEMPLE OF THESEUS) ATHENS, GREECE

An example of the first scheme of symmetrical composition. See page 42.

The first æsthetic law is, then, the law of balance, which may be stated as follows: Every building should be so composed that the parts of it on either side of an imaginary line expressed in some manner in the design, shall be of apparently equal weight. The most simple application of this law is seen in symmetrical buildings, so it will be well to consider these first, and leave the more difficult applications in so-called picturesque and non-symmetrical buildings till later. Symmetry—the exact correspondence of the two halves of a building—can only exist when a building is in perfect balance. This is self-evident, but it is not all. Symmetrical buildings may themselves be divided into classes, corresponding to several different schemes of design, more or less complex. The simpler schemes are the most universally successful, and it becomes increasingly difficult to manage the whole composition as motives are added, since the increasing complexity makes it difficult for the eye to seize at once the inherent balance, which is such a large element in the beauty of the whole.

The simplest of these symmetrical masses is, of course, the plain rectangular front, with or

without a gable. Such a front can be seen in any Greek temple—the Parthenon, for example, or the temple of Theseus at Athens.* The latter is chosen for illustration because in mass, at least, it exists in nearly its original form. The front of this temple consists simply of a row of six columns, crowned with a low gable—a pediment. The symmetry is perfect, and hence the balance; the axis of balance, the pivot, as it were, is just sufficiently expressed by the peak of the gable above, and the door below. The whole, in absolute, easily grasped balance, is reposeful, satisfying and beautiful.

A second scheme, a shade more complex, consists of a simple rectangular form in the middle, usually, but not always, long and low in effect, with a smaller, but strongly accented form at each end. It is seen to perfection in the new Post-Office on Eighth Avenue in New York City † and in the Bureau of Printing and Engraving at Washington—a long open colonnade, stopped at each end against a projecting feature or pavillion of heavy masonry. In a slightly more subtle form the same scheme is seen in the Palazzo Vendramini at Venice.‡

* See the Plate opposite page 40.
† See the Plate opposite page 202.
‡ See the Plate opposite page 46.

In this case the end pavillions are treated exactly like the portions between them, with the exception of the coupling of the columns on either side of the end windows, and the flat wall that shows between these coupled columns. These little changes at the ends of the building give it at once a dignity and a distinction that it could never have had if the end bays had been the same as those between. Without this additional weight at the corners the building would have had an undistinguished, indecisive air. There would have been always the feeling that there was no reason for the building ending where it did, as though it might just as well have been two or four or six windows larger. The same thing is true of the New York Post-Office—a colonnade of that length without strong end pavillions to stop it would have been disastrously amorphous, beginning nowhere, ending nowhere.

The æsthetic value of these end features in a large and complex building can be seen in the apparent weakness of so many of our modern American loft buildings. Symmetry they may have, but demand for light and show window space has reduced walls to mere piers of terra

cotta or brick; economy in the use of steel necessitates the regular spacing of these piers, so that all too many of them seem mere unfinished shells—slices of building, as it were, sawed in sections out of some huge and perhaps beautiful composition, and then dumped hit or miss in our streets.

Cathedral of Notre Dame, Paris, France.

Fig. 2. An example of the second scheme of symmetrical design, with the end motives—the towers—as the dominating features.

However, there are dangers, too, in the use of end pavillions. The main danger is that they may become too large for the whole, large enough to distract the attention from the central

portion of the building, and yet not large enough to be the main features of the design, as they are in Notre Dame in Paris,* or the Cathedral of Cologne, or Saint Patrick's Cathedral in New York. This is a fault that spoils great numbers of American churches; the towers, that ought to dominate, have been reduced and spread apart, with a mediocre porch between, so that the final result is confusion, three units of equal æsthetic weight crowded together, all fighting for the observer's attention.

This scheme of tripartite symmetry is closely allied to the next scheme, also of three units. In this scheme the central unit is much more strongly emphasized; it is usually higher and broader than the rest of the building, so that the effect, instead of being that of a unit repeated several times in the middle, and stopped at the ends by heavier units, is that of a strong unit in the middle, with weaker elements at each side. The effect of the two schemes might be compared to two families out walking; in the first the father and mother walk on opposite sides of the road, with all the children hand in hand between them; in the second the father is alone in the middle, with a child or two on either side of him.

* See Fig. 2, page 44.

This last scheme is a favourite one for the smaller types of formal building. It is illustrated by hundreds of colonial houses, such as the Craigie (Longfellow) house in Cambridge, Massachusetts, and by endless small libraries, where the central, dominant portion suggests the welcome of the entrance, and the less dominant portions on either side the various rooms to which the entrance leads. The Minneapolis Art Museum is an example of the same treatment applied to a larger building. In this scheme the danger is that the side portions shall become unduly important, through size, or decorative treatment, so that the effect of the centre is lost, and again confusion results.

A fourth symmetrical scheme is well illustrated by the United States Capitol.* It consists of a main central portion, subsidiary connecting links, and, at the ends, strongly marked pavillions. It might almost be considered a combination of the two foregoing types. It is the most formal and monumental of all, and is, perhaps, the most successful manner of treating large and important buildings. Hundreds of examples suggest themselves, the colonnade of the

*See the Plate opposite page 32.

VENDRAMINI PALACE, VENICE, ITALY

An example of the second scheme of symmetrical composition; note the heavier treatment of the end bays.
See page 42.

Louvre, the Metropolitan Museum of Art in New York, many of our best state capitols, and on a smaller scale, certain monumental mansions of Virginia, such as Jefferson's Monticello, or the earlier Shirley. Here again the central portion, to be successful, must be strongly dominant. If the end portions become equal to the centre in apparent weight, the eye will be tempted to fix on any of the three as the important feature of the building, will strive to fix the axis of balance in the end instead of in the centre, and confusion will result.

The reader will notice that in the successful examples of every scheme, except, perhaps, the second, the axis of balance is strongly accented by the dominant central portion. In the case of the second scheme, illustrated by the New York Post Office, and the Vendramini Palace, or by Saint Patrick's Cathedral, the ends are heavily and equally weighted, and consequently, so strong is the sense of balance, that the axis of balance need not be expressed, because its position is grasped the moment the building is seen.

All of the best symmetrical buildings can be

grouped under one of these four heads. The moment a building becomes so complex that its motives will not fall into any of these four groupings, in other words, when the system of the building divides into over five distinct motives, the probabilities are all against its being a success. There is a limit to what the human eye can perceive and the human mind apprehend in a moment, and a beautiful building must stand forth as beautiful on the most cursory observation. This accounts for the ineffectiveness of the National Gallery in London; its system of walls and triple end pavillions is too complex to be grasped at the first glance. To avoid confusion, the main divisions of any building must not be so many in number as to make it difficult instantly to understand their system.

It is a more difficult matter to understand the application of the law of balance to non-symmetrical buildings. At first sight a non-symmetrical building may appear out of balance, yet beauty cannot be denied it. What a bald place this earth would be if every building in it were absolutely symmetrical! We should lose Chartres Cathedral, for instance, and Amiens, and most of the early French Renaissance

châteaux, and countless lovely modern houses and country churches, and myriad other buildings—and to be denied all those buildings gifted with that free and appealing charm which we term "the picturesque" would be an unimaginable loss.

CATHEDRAL, CHARTRES, FRANCE.

FIG. 3. Balance is produced in a non-symmetrical building by careful proportioning of the unsymmetric portions.

The simplest class of non-symmetrical buildings is that in which the axis is very clearly felt, in which there exists a kind of free, though not absolute, symmetry. Chartres and Amiens Cathedral are examples. In both the lack of

symmetry is in certain details, rather than in scheme. If well carried out this scheme is always successful, but balance and beauty result only when the mass of the two unsymmetrical parts is kept almost the same. For instance, in Chartres Cathedral, one of the most beautiful buildings of this type, balance is preserved and beauty made certain by the fact that the greater sturdiness and solidity of the older tower on the right is compensated for by the added height of the left hand, lighter, more airy tower. The present aspect of the front of Rouen Cathedral, on the other hand, shows the unfortunate effect of this quasi symmetry when wrongly handled. Whatever is thought of the glorious doorways and the lacy late Gothic openwork all over the central portion, it is certainly true that as a whole the front is not perfectly beautiful, for the heavy mass of the famous "butter tower" on one side, with nothing adequate to counterweight on the other side of a front otherwise symmetrical, throws the whole out of balance, and consequently produces a strong feeling of dissatisfaction, of restlessness, whenever the whole is considered as one single work of art, rather

than as a combination of exquisite details.

In these cases of non-symmetrical but nearly symmetrical buildings, the balance is obvious, but in the more complicated "picturesque" buildings, the question becomes more difficult. It is impossible to codify these "picturesque" buildings as most symmetrical buildings have been codified; they are too different from one another, and possible schemes of design are infinite. Yet it is absolutely important that every beautiful building have balance, whether it is symmetrical or not, and if one is to look with knowledge for beauty in buildings, he must know something about this difficult question.

The best that can be done is to indicate and to illustrate a few of the basic principles that govern balance in so-called "picturesque" buildings. First, the axis of balance must be expressed in some way, by door, or balcony, or porch, or some interesting feature. This, perhaps, is the most important point of all. If the axis of balance is so expressed by such a feature of the building, the eye will be drawn to it at once, and, resting on it, will feel that the mass of building on each side is approximately equal. A sense of repose results at once, and conse-

quently the building appears beautiful. To illustrate this point, here is a sketch of the front of a small country church.

a. b.

FIG. 4. The chapel "a" has balance, because the axis of balance is expressed by the porch. Chapel "b," with the porch shifted to one side, is out of balance, and therefore unbeautiful.

In this case the porch, being the most salient feature, attracts the eye at once, and when the eye rests on that, the mass of the building on each side seems equal; balance is the result. The higher, heavier mass of the tower, close to the axis, balances the longer, lower gable, with its greater leverage. Then notice the awkward result that follows if the interesting point is far away at one side. In the second case the eye is again attracted by the porch, but this time it finds the whole mass of building upon one side,

with only sky on the other; the balance is lost, and an inevitable restlessness and awkwardness, which destroy one's artistic pleasure, follow. Of course, this is an extremely simple case; it is given merely as a hint to stimulate further observation. In reality the architect must keep in mind not only the front but the sides and the rear. He must imagine the building as it appears to a person walking all around it, with reference to all existing trees, or slopes of ground, or shrubs near by. From every possible view a really good building must have balance, and this accounts for the comparative failure of some of our informal American country houses. They seem manifestly to be designed with one view point, or two, in mind; from these points they are good, perfect in balance and composition, but from other points the same buildings are a mere hodge podge, and they lack that little accent on the centre of balance given by a chimney or flower box, or some little point of interest, that would have made the whole seem balanced and in repose. That is why the architect is, as a rule, so suspicious of the "built picturesque"; on one side it is likely to be in almost too studied a balance,

on another a mere confusion of changing line and restless mass.

There are a few points about the balancing of masses that it is well to make clear. First, there is in this matter an artistic analogy to the law of leverage. That is, a heavy member close to that interesting feature which expresses the centre of balance—the pivot, as it were—will counterbalance and be balanced by a long, low, lighter member further from that point. Secondly, the shapes and positions of the masses themselves affect the balance. For example, a member that projects always seems heavier than a receding member. That is, in a building of the "L" type, with one arm longer than the other, the best place for the centre of interest is on the long side near the angle, for then the projecting wing, nearer the eye, seems heavier than the rest, and requires a longer portion to balance it. A high mass usually appears proportionally heavier than a low mass. So, in the chapel mentioned above, although there is more area in the gable, the tower seems heavier because of its added height.

So far we have been dealing merely with mass, but artistic balance has another compli-

cation. There is a balance of interest, as well as a balance of mere apparent weight. That is the architect's salvation, for when he is confronted with a plan that seems to demand a treatment hopelessly unbalanced, he can give beauty to the whole by making the lighter side of his composition so interesting, by means of ornament, or window boxes, or a projecting bay window, or a lattice, that the attractiveness to the eye of both light side and heavy side seems almost the same, and consequently the eye is at rest, and repose and beauty are the result.

This is not an attempt to treat the difficult subject of balance exhaustively but rather to set down the main principles, and to give a working basis for the understanding of the matter, so that the reader may be able, as he looks at the buildings all around him and at their settings to form on these foundations a criterion of criticism for himself.

The second great artistic law is the law of rhythm, and it may be stated thus: Every beautiful building should be so composed that its units shall bear some rhythmic relation to one another. The term "rhythm" is applied to ar-

chitecture in a very broad sense. In most cases there does not exist throughout a building any set repetition of groups of the same form without a break. There are exceptions, such as the Colosseum in Rome,* where the continued repetition of the same rhythmical form, the same *measure* almost, consisting of the broad, dark mass of the arch, with the smaller, lighter mass of masonry between, broken by the projecting columns, gives a tremendous and overwhelming dignity. In the interior of a Gothic cathedral, Amiens,† for instance, there is the same dignity produced by the repetition of a rhythmical measure of the same sort, broad arch and narrow pier, only in this case the unit is in three tiers, and each tier varies in rhythmical structure from the others. First, low down, there is the broad arch that leads from nave to side aisle. Above this is a narrow band of arcading, the triforium gallery, and above this still the great clerestory window that corresponds in vertical divisions to the triforium, but dominates in richness. Each of these complex units is repeated the whole length of the nave, and in the wonderful rhythmical ef-

* See the Plate opposite page 22.
† See the Plate opposite this page.

CATHEDRAL, AMIENS, FRANCE
(INTERIOR)

An example of the impressive effect of strongly marked rhythmical design. See page 56.

fect that results lies one reason for the poetry of the whole.

It is in this matter of rhythm that certain people have tried to find an absolute analogy between architecture and music, but this is an analogy that must not be pushed too far. Architecture is analogous to music, but the analogy is in "the intellectual vagueness, the emotional certainty" of both arts, as J. A. Symonds puts it, and in the abstract character of the forms used, rather than in any mere tricks of technique, or any hidden and mystical twinship of form.

To try to find musical analogies to architectural forms is amusing and stimulating, but to push this effort too seriously and too far, to try to distinguish actual chords and pitches and complex musical rhythms in architecture, so that a symphony might be built, or Saint Peter's played, that is an absurdity; that is losing the particular charm of both arts. No, architecture has not been called "frozen music" because there are scales and chords and measures and rests in great buildings, but because both arts strive to obtain emotional effects of the same sort, that is, emotional effects of the graver,

deeper, vaguer, and less distinctly discriminated, more sublime sorts, by means that are abstract, that exist by reason of their own virtue, and in which representation of actual sights and sounds bears but a secondary place.

Furthermore, if we are to look for an accurate analogy to most architectural rhythm, we shall find it in the rhythm of good prose rather than in that of music. Architecture has more of the rhythm of a Gregorian chant, or of Plain Song, than of a Beethoven symphony; it has more the rhythm of the flowing English of a Pater essay than of the poetry of Burns or Keats. This is a point that must be insisted on, for if an attempt is made to find in every beautiful building the absolute metrical scheme of music or poetry, disappointment can be the only result. For an analogy to help the better understanding of rhythm in architecture, we must, therefore, turn to prose. Take a Stevenson essay, for instance, such as "El Dorado." When a sentence from it is read out loud, it falls naturally into groups of syllables, phrases and clauses, freely balancing each other, each leading gracefully into the next, the whole effect rising in waves of sound into climaxes, or melt-

ing softly into rests. The rhythm of a good building is much the same, except that in place of syllables we have all the play of light and shadow and colour over its various surfaces and openings. As the sentence divides itself into freely balancing phrases and clauses, so the building divides itself into freely balancing units—porticoes, doors, projecting wings, or sometimes even the mere pleasing alternation of window and wall. As in the sentence the phrases lead gradually and gracefully from one to another, so the units of the good building lead one to another. As the sentence has its climaxes and its rests, so the lights and darks of a building surge into climaxes, and soften into vagueness. The Capitol at Washington might be considered a building with three climaxes—the three great porticoes, and two rests—the simpler wings between them. The White House has at each end a simple element of wall and window that changes in the middle to a climax produced by the insistent alternation of light and dark in the strongly projecting colonnade in the centre.

But this is not all. All the different phrases, or units, into which a building seems to sepa-

rate, may themselves be strongly rhythmical. So the repeated alternation of light and dark in colonnades is rhythmic; so, too, is any repeated change of wall and window; and the ornamental details of a building have usually the strongest felt, the most strictly metrical rhythm of all. The reason that the cornice with brackets has always been so popular lies in the fact that the strong rhythmic repetition over and over again of the light brackets and the shadows between binds together into one whole all the looser rhythms of the building it crowns, as the insistent bass of a Spanish dance binds together its flowing melodies. For the same reason, in a complex building of varied rhythm unity is produced by the repetition here and there of units with strong rhythmic character; for example, a group of windows spaced equally, or a colonnade of the same number of columns, or sometimes merely bands of repeated ornament, with the result that the eye everywhere glimpses some element that sets, as it were, one rhythmic tone for the whole building.

To these horizontal rhythms there must be added vertical rhythms, before a complete idea of the rhythmic content of a building can be

gained. These vertical rhythms, caused by horizontal divisions, intermediate cornices, tiers of windows, and the like are of particular importance in tall buildings; and where there are many stories of the same height, as in so many of our office buildings or apartment houses, monotony must be avoided by grouping the stories in some way, by making the bottom stories count together as a basement, and the upper ones as a crowning feature. This gives at once a pleasing variety to the rhythm, without destroying it. One may see a simple example of vertical rhythm in the front of the Vendramini Palace.*

Closely allied to this question of rhythm is the next great law of building beautifully, the law of proportion. According to this law, a beautiful building should be well proportioned. The apparent vagueness of the law will disappear as its terms are defined and amplified, and it can be stated in no more definite form that is not unduly long.

Good proportion, broadly speaking, is the quality possessed by any building whose several parts are so related as to give a pleasing impression. It is primarily a quality of the relationship of all the units in a building, rather

* See the Plate opposite page 46.

than a quality of the units themselves. Indeed, it might be truly stated that between certain very wide limits there can be in a single element of a building no such thing as good proportion. For instance, in some cases a high, narrow window, like the great clerestory windows of Amiens, is in perfect proportion, but imagine the awkwardness of such a window in the basement story of a long, low building. It would look hopelessly out of proportion.

It has been claimed that the feeling of good proportion is produced when the parts of a building are in simple arithmetical ratios, like that of two and three, or two and four, and with this in mind attempts have been made to codify arithmetically what good proportion is.* For instance, it has been claimed that the typical Gothic cathedral is based on the equilateral triangle; that Greek temples were designed according to complex geometric principles; that the height of the best door is exactly twice its width, and so forth, but this can be considered true only to a limited extent. It is better to consider architectural proportion, as its name suggests, rather as the relationship between the

* See, for a statement of this theory, G. L. Raymond's, "The Essentials of Aesthetics."

diverse ratios of height and breadth, etc., of all the units of a building taken together than as any innate beauty in simple ratios themselves. The architect may have definite ideas of ratio in his mental background, but the best design is always produced by the constant free adjustment of size and ratio in the units of a building until the whole takes shape as a single, beautiful object, until "good proportion" is secured. It is this larger side of the subject of proportion, this question of the relationship of various units, doors, windows, etc., to each other and to the whole, that the observer of architecture must keep in mind, rather than the ratios of the units themselves. In a good building, each unit, however beautiful in itself, is in reality only a part of the whole, and it is as such that it should always be judged.

When proportion is regarded in this larger light, it will at once be evident that the law of proportion is closely related to the next great æsthetic consideration, the law that a building must be harmonious to be beautiful. Indeed, if harmony were merely a matter of proportional harmony, we might consider the subject already covered; but harmony in a building covers a

wider field than the mere harmonious proportion of the various parts. There must be harmony of expression as well, and to a certain extent harmony of style. In a word, in a beautiful building, not a single element must be so designed as to appear disturbingly distinct and alone and separate from the whole, for the moment this occurs, unity is lost, and without unity there can be no beauty. Harmony, then, is threefold, harmony of proportion, harmony of expression, and harmony of style.

By harmony of expression is meant a harmony in the character and purpose of a building as seen in its exterior forms. For instance, in a building intended to express intimacy, seclusion, privacy in all of its parts, as in a masonic hall, or a small country cottage, it would be a mistake to have an enormous entrance, suggesting the ingress and exit of great crowds of people. It is the one blot upon the beauty of most of the English cathedrals, even the best, that there exists a distinct discord of expression in their west fronts; for all their tremendous length and all their richness, their feeling of enormous size, of spiritual invitation and of democracy is contradicted by the forbidding im-

pression given by the tiny doors through which most of them are entered.

By harmony of style is meant a harmony in the forms used, not so much in their general proportion as in their details, such as mouldings, carved or modelled ornament, the use of different materials, and so forth. That is, the moment two forms are used in the same building which belong to obviously different categories, harmony of style is lost. For instance, a building in which great Gothic windows and pinnacles were used in one part, while another part was severely classic, would give a feeling of restless incoherence, fatal to any beauty. By harmony of style it is not meant that a building must be rigidly in one of the so-called historical "styles," for stylistic purity is something vastly different from æsthetic harmony. There are many charming buildings of mixed historic style that, nevertheless, possess this quality: a notable example is the church of Saint Eustache in Paris. In this case a church absolutely Gothic in conception, with lofty vaults and small piers to support them, with great window space and little wall, is treated with detail of a distinctly classical kind, pan-

elled pilasters, Corinthian capitals, ornament of a renaissance character, but so skilfully have these details been modified, and so frankly have they been adapted to the Gothic form of the building, that there is no feeling of discord. Very many of our best American buildings are equally free; Roman arches are combined with Greek mouldings, and the whole treated in a free and modern manner. For an example of perfect architectural harmony, consider the front of the Boston Public Library.* Its universal popularity is sufficient evidence of the harmony of its proportions; and the harmony of expression is evidenced by the quiet dignity of every detail, from the restful lines of the tile roof to the strong and simple basement. Harmony of style is also evident. The cornice seems an adequate crown to the whole, the round arches fall most happily into the scheme, every smallest moulding seems studied and designed in the same spirit of quiet and reposeful delicacy. It is this unity, this harmony and the apparent simplicity that results, which are the main reasons for the delightful and appealing charm of this library; its perfect harmony makes it one of the best loved of all modern American architectural masterpieces.

* See the Plate opposite this page.

PUBLIC LIBRARY, BOSTON, MASS.

An example of the fine repose which is caused by thought'ul simplicity and a careful harmony of every part. See pages 22, 66.

There remains but one more æsthetic rule or canon to be considered: the law, as we have stated it, of climax. The necessity for some climax, some spot in a building more interesting than the rest, has already been suggested in the discussion of balance. The eye, as it wanders over a large building, grows tired if there is no single feature on which it can rest, and any eye exhaustion is fatal to beauty, just as mental exhaustion is fatal to beauty in a long piece of prose in which there is no climax on which the mind can fix. But in architecture the need of a centre of interest is slighter, and in some buildings this climax is so subtly treated as entirely to escape notice. In the New York Post Office, for instance, there seems no centre of interest, no climax. In reality, the whole magnificent colonnade is itself the centre of interest; its large size is compensated for by the regularity of the repetition of the motives. In particular, this is seen to be true when one considers the building as a four-sided whole, and not as a single façade, for the simple, unbroken rhythm of the back and sides leads the eye inevitably around the corners until the main front comes into view, and the eye rests, refreshed and enriched, on the noble colonnade,

a worthy climax to the whole. So the dome of the Capitol at Washington * binds the whole complex building together because of its beautiful dominance; and in the case of Saint Peter's at Rome, that superlatively lovely dome fulfills a similar and still more difficult service, for here the greater portion of the exterior is bald, confused, and out of scale; yet all is passed over and forgiven because of the perfect beauty of the centre of interest, the great dome. †

A failure to fulfill this condition of beauty is one of the greatest faults of our modern American architecture. Lost in the multitude of windows our modern exigencies demand, or often overwhelmed with ideas of bigness and grandeur, the American architect too often produces dreary monotony, when, if he had concentrated his richness on one spot to fix and delight the eye, he would have produced a truer and simpler beauty. If only our architects and builders had kept this idea always in mind, how different our streets would have been! Instead of that dreary succession of windows, windows, windows, set in walls covered, often, with meaningless and ill-applied ornament, there would have been an entire simplicity, with here and there an ele-

* See the Plate opposite page 32.
† See the Plate opposite page 216.

ment of real beauty and grace; perhaps a doorway, perhaps merely one little carved plaque or shield to centre one's wandering interest. Then such a street would be restful and charming, like some of the old alleys of Philadelphia, or the lovely-doored byways of Portsmouth or Salem.

There is one corollary and result of these greater laws which deserves notice because of its apparent universality. This is the fact that every beautiful building as a whole, and many of its decorative elements in themselves, have a threefold composition, a beginning, middle and end. Most of the pleasing columns, for example (with the one exception of the Greek Doric column), have this tripartite character—a base, a shaft and a capital. The Boston Public Library * has a strong basement story, a higher, more graceful portion above this, and a crown of roof and cornice. As one analyzes the buildings that please him, he will be more and more struck with the universality of this threefold composition. From the tall skyscraper with its strong stone basement, its simple brick shaft of many stories above, and its cap of richly ornamented cornice, or pierced

* See the Plate opposite page 66.

parapet, or upward pointing roof, to the simple classical entablature, with its architrave, frieze and cornice, he will find everywhere this threefold form.

The explanation of this is simple. It is analogous to the ideal structure of an essay or a speech, with its introduction, its body of argument and exposition, and its conclusion. When one looks at anything beautiful, his eye demands that this object be definitely limited at the ends, and at the top and bottom, for if there is no limitation save the mere unadorned top and base of the building, a feeling of indecision will probably be produced, a feeling that the whole is weakly indeterminate. That is why whenever one sees a building without some little base moulding or band, or a building chopped off square at the top, hard, uncompromising, straight, there is always a certain shock produced: however beautiful in itself is the shaft of a building, without some base and some cap it will be inevitably unsatisfactory. On the other hand a strong base and a rich cap go far towards making up for poor design in the rest of a building. A glance at the Capitol at Washington, or the Louvre colonnade, or the New

York Post Office, or the Boston Public Library will reveal this principle at once.

This discussion of the fundamental basis of æsthetic composition in architecture does not pretend to be final or complete. In such a personal thing as artistic pleasure there are bound to be wide differences of opinion. Even the so-called laws that have been stated may phrase themselves differently to different people, and other new requirements of beauty add themselves to the list. There can be no dogma stated to which all will agree, consequently the laws that are given above must be applied with latitude and freedom; they must be considered not as formulæ, but as mental stimulants; the truly appreciative critic of architecture will not stop with them, but will use them as a basis for making his own decisions with regard to the buildings he attempts to value.

After all, good and bad are relative terms, and particularly in such a complex art as architecture, and in such a complex object as a building it becomes dangerous to point to this as good and that as bad. The enjoyment of architecture is a personal matter, and the person who attempts for himself sincerely to form his own

judgments about the buildings he sees, and who attempts to find reasons for his judgments on real and thoughtful convictions, is doing more for the growth of architectural taste than the one who accepts blindly the taste of the most competent critics. The reader must remember, too, that in this chapter but one side of the broad art of architecture has been treated; it has been considered as bald and bloodless form, void of other content. But just as architecture is more than bald form, just as it is bald form, clothing and expressing and growing out of human life, so architectural appreciation must include this human, subjective, and expressive side as well as the purely æsthetic. On the other hand, just as there can be no architecture without form, so architectural criticism, unless it be founded on a strong and sane æsthetic basis, becomes vague and sentimental. It is a framework for this æsthetic basis that this chapter has tried to give, and it only remains for the reader to clothe the framework with his own personality and by his own observations, until beauty is seen neither as a matter of geometric ratios, nor of vague and cloudy intuition.

CHAPTER III

THE ARCHITECT'S MATERIALS

It is one of the charms of architecture that its component elements are in themselves few in number and simple in structure. The very fact that all the beauty of a building lies in relationships of simple and easily comprehended parts has forced the architect to study these relationships to the last degree, so that a really great building has in it more absolute perfection of pure design than any other of man's works, with the possible exception of the world's greatest music. The architect can invent so little that his effort must be closely concentrated; his appeal to the public is so carefully circumscribed that it must be made with all the more poignance, and the materials at his disposal are so limited that each one of them must be as perfect as he can possibly make it, for no charm of face or human form, no allure of lovely sentiment, can blind one to a badly designed building's artistic faults.

The appeal of a building to the senses is produced by two things only, the play of light and shade over its varied surfaces, and the colour of the materials of which it is composed. This play of light and shade, in turn, is produced by the treatment of simple, surprisingly simple, elements, that are necessitated by the requirements of the building itself. The human mind always works up from the necessary to the beautiful. Primitive man had to make a hut before he could make it a delight to the eye. It is much the same now; the architect must make a building before he can make it a work of art, and one feels instinctively that the most beautiful buildings are those in which the necessities of the building are most clearly observed, and most clearly expressed. It follows, then, that the beautiful building is produced by the arrangement, in accordance with the requirements of beauty, of elements primarily structural.

The first homes of mankind may well have been caves, walls and roof of rough rock, smoothed crudely, perhaps, but with little of real architecture about them, despite attempts at mural decoration, evidences of the love of

beauty that seems coextensive with humanity. Nor were the simple huts of bushes and rush and wattle of great architectural moment. Their lines were too simple and their requirements too small to admit of great composition. They are, nevertheless, interesting to the architectural critic, because they show us the elemental necessities of a building—walls and roof: a roof to keep out the wind and the rain, and walls to support the roof and give height inside, as well as to keep out the cold.

To this day, these two things, walls and roofs, are the most fundamental and the most important of the architect's materials, for they determine the whole shape and size of the building. Country house, office building, church, factory, all demand walls and roofs, and the wall shapes and heights, projections and recesses, that a building requires determine absolutely its æsthetic composition and therefore its effect. Their importance is at once apparent. They are the framework of the whole artistic scheme of the building, and to them will be due a great deal of a building's effect.

The first thing that is required of a wall is solidity. Whatever the material, stone, brick,

wood, metal, the wall must be strong enough to do its work, and solid enough to keep out the weather. This should be at once apparent to the observer, and any simply treated, well-built wall will give this effect. There is nothing more dignified, more restful to the eye, than a cut stone wall correctly used; it is only when there is too much attempt at ornamentation, so that the apparent strength of the wall is decreased, that restlessness results.

The most successful treatments of a wall, then, are those in which the structure of the wall is expressed. Take an old New England eighteenth century farmhouse, nestling in lilac bushes and old elms. It has a wall of wide clapboards, grey and weather-beaten, and corner boards sheathing the corners, perhaps with decorated capitals. It is delightful, unassuming, sincere, and a great part of the reason for this lies just in that simple, restful expanse of grey wood, so obviously designed for its purpose, with the corner boards giving just a touch of vertical feeling. Then try to find some house of the period of 1870, with jig-saw work scrolls, and the shingles of the walls carefully cut into patterns, zigzags, or wavy curves or what not,

or go through our cities and pick out some ostentatious office building or apartment house whose walls are covered with a maze of terra cotta ornament, and see how unsatisfactory the effect is. The wall is lost, there is no repose, only a restless wandering of the eye. In a Gothic cathedral, such as Notre Dame, where at first sight the wall seems covered with ornament, clear spaces are left, and the decorative lines are all strongly structural in feeling, so that the expression of wall is given. There must always be this restful strength somewhere in every good building.*

The same facts apply to brick walls; here, also, there must be quiet repose. Too obvious pattern in the brick work, too great variations of colour are bad, because by them the wall is broken up and its apparent strength reduced. Quiet patterns of subtle colour tones, such as are used in much Tudor English work, Hampton Court Palace, for instance, are pleasing; they vary the monotony, without detracting from the strength: but they must be unobtrusive. For the same reason, it is dangerous to mix brick and stone, or brick and terra cotta to such an extent that the unity of the wall is marred. Ac-

* See the Plate opposite page 78.

cents of stone in a brick wall are good, if they are in important structural positions, keystones over arches, for example, or architraves —frames—around openings, or courses of stone at the corners of a building—quoins—or wall caps or cornices or bases, for if rightly treated, they appear to strengthen the wall. Sometimes even a shield or a panel of stone set in an interesting or important position is exceedingly charming, but the hit-or-miss insertion of panels and garlands and shields that is so much practised by our cheaper architects and real estate builders is productive of nothing but confusion. Better, every time, a monotonous but sincere and simple wall than an ostentatious eyesore.

For the same reason the panelling of stone walls is dangerous, unless the panelling is kept very quiet and unobtrusive. Simple, shallow panels are often charming: their delicate lines seem to emphasize the strength and solidity of the wall, but the moment they become coarse, and are framed by too heavy mouldings, the restfulness of the wall is gone. Panelling of walls of wood is quite another matter, for the structural qualities of wood, the comparatively small size of the pieces obtainable, and the fact

PANTHÉON, PARIS, FRANCE

The dome seen is built high above the interior dome for external effect. Note the restful effect of the simple unornamented wall. See pages 77, 127.

that it warps and shrinks continually demand some treatment expressing this quality. Wood panelling, therefore, is a correct expression of material, and is good in general, but even with wooden panelling the panels can be too deeply sunk, and too heavily moulded.

All walls, then, should be treated so that their function and their structure are expressed. They should be ornamented sparingly, and such ornament as they have should be carefully designed, so as not to diminish their apparent strength. Repose is an absolute necessity. Ornamented caps they may have, and accented bases to express foundation, and the corners or the borders of openings may be accented by mouldings, or bands of differing materials. They may even be panelled, provided the panelling be delicate and quiet, but a wall can never be beautiful without that quiet dignity and that restful simplicity that only careful proportion and sincere expression can give.

Yet there can be too much wall. Common sense must be our mentor in architecture as in morality, and always the use to which a building is put must determine its design. Our modern world demands light, and floods of it, and

our buildings demand adequate doorways for entrance and exit. A building where there is obviously too much wall and too little window for its purpose will look like a tomb—gloomy and repelling—just as a building where there is an excess of window looks light-headed and unstable. But whatever the amount of wall, it must be simply treated and its nature sincerely expressed.

A walk through any of our cities will reveal the woeful lack of regard for this that has been rife in our country too long. We are improving little by little, and the value of restful wall is coming to be more and more appreciated, but there is still far to go. For one building like the Ethical Culture Meeting House in New York, with all its stalwart, strong-walled dignity, or the simple, restful masses of some of the new houses in the suburbs of Chicago, there are thousands which add to the nervousness of our life and our mental exhaustion by forcing upon us immense areas of meaningless ornament. It is no wonder that we have grown to appreciate with even too great an enthusiasm, the simple, unassuming English cottage in a Cotswold valley, or the rugged houses

of our own bleak New England countryside; for in them, at least, in the crude half-timbering or stuccoed masonry or hand-wrought shingle, there is more than the mellow beauty of age and sentiment: there is the true charm and clear repose of unbroken areas of simple wall.

The matter of roofs is more complex. At some time the cave or the rush hut that was his first home became insufficient for primitive man, and he discovered that he could lay tree trunks flat on earthen walls, and thus make himself a flat roof. So there are two main classes of roofs, flat roofs, and roofs with sloping sides or vaults. Assyrian bas reliefs show us domed houses, recalling the conical form of the primitive hut. Egyptian roofs, on the other hand, seem always to have been flat.

The two classes of roofs have widely differing uses. The flat roof was developed chiefly among those peoples living in hot, dry countries. It furnished a most useful outdoor living room. As such we find it used universally in nearly all the Oriental countries, particularly in the tropics. In colder climates where outdoor life had less charm, and in countries where there is excessive rainfall, or heavy snow that must be

disposed of quickly, we find the sloping roof most used.

The simplest sloping roof is the gable roof, but this roof is capable of endless modifications. There is a whole gamut of varying effects and expressions between the dignified formality of the low roof of the Greek temple, with its gables —pediments—decorated with sculpture, and the fantastic and romantic effect of a German mediæval village, with its myriad steep roofs and peaked gables. In the north of England—in Yorkshire—the stone built houses nestle low and sturdy to the ground; the gables are low, and the roofs comparatively flat. The effect is quite in harmony with rolling moor and bleak, wind-swept uplands. In Switzerland the same solidity, the same strength, the same kinship with wild and bleak Nature, is given to the châlets by the same wide and gently sloping roofs. That is the reason a Swiss châlet, so lovely, so perfect in its place, seems always so fantastic and meaningless, set down in flat civilization.

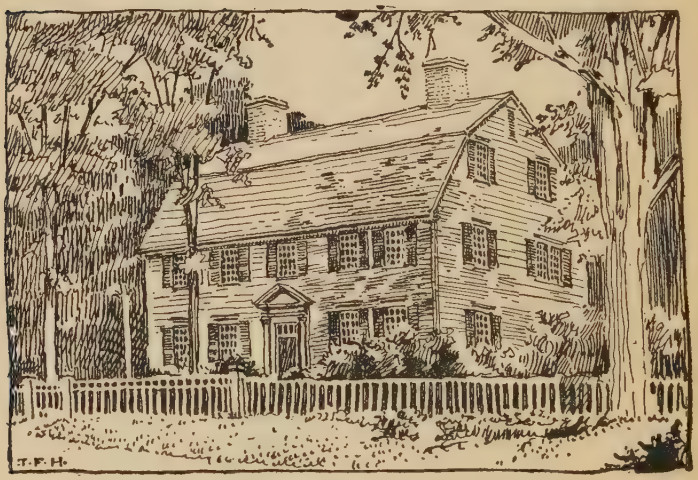
For roofs, so absolutely essential to our protection from the wildness and bitterness of Nature, have, for that reason, an especial relation

to natural conditions, and all the natural conditions of any situation must be taken into account in the design of a roof to suit that situation. There are flat-roofed Italianesque villas on our Maine coast, but they look cold, windshaken, uncompromisingly naked, like a Philippino shivering in Coney Island. Any roof that looks, as these do, strangely uncouth and out of place, is a roof ill-designed. The good roofs are those which seem to have grown where they stand, in perfect harmony with their surroundings.

The material of which a roof is built is another important factor that must be taken into account in any consideration of roofs. Tile is sunny, warm, full of interest, and it seems to demand a low roof, for too much tile would be too interesting, and the building itself would lose its value, be merely an appendage to a roof, like a very little girl in a very large hat. Slate is colder but more adaptable, formal as well as informal, suitable for the steeper roofs, and its increasing use is a hopeful sign of our times. Shingles, also, treated simply and unobtrusively, are attractive in texture. Thatch may be used on small garden houses and the like, but

it is perishable and heavy, and it would be painfully out of place in our workaday world.

There are a thousand varieties of gabled roofs, and their change and variety is a continual joy. Our broad New England gambrels—gabled roofs with a double slope—are the charm of many a fascinating old town. Small or large, there is about them all such a comforting solidity, such a simple and beautiful homeliness, that it is not strange they are coming to be so widely



Old House in Kennebunk, Maine.

Fig. 5. This house owes much of its charm to the simple lines of its gambrel roof.

imitated. It only needs the artist's touch in the relation of the slopes, so that they shall be neither too much the same, nor yet too different, with the lower slope too vertical—a touch, alas, all too rare in our modern speculative suburbs —to make a gambrel roof an object of distinction to a whole community, like the Warner House in Portsmouth, New Hampshire, or the old farmhouse that is here illustrated.*

There is another type of roof coming more and more into use that is, perhaps, even more adaptable, the hipped roof. Here the roof slopes up from all four sides at once, instead of from two only, as in the gabled roof house. The result is that the line of demarcation between roof and walls is a continual horizontal line on all four sides of the building, without the triangular wall spaces of a gable. This produces at once a great dignity and restfulness of feeling that is tremendously valuable. The French châteaux of the Loire valley, perhaps the most dignified group of country houses in the world, all have hipped roofs. Most of the Italian villas have them as well, and so have many of the most beautiful Georgian mansions of England. The simplicity of the wall surfaces that these roofs

* See Fig. 5, page 84.

produce, and the variety and charm of their own form—the difference, for example, between the actual slope of the roof itself, and the slopes of the intersections, or hips, between its adjacent sides—make a whole composition, dignified and quiet, attractive and interesting, with just a shade of pleasant formality.

NEWTON HALL, NEAR CAMBRIDGE, ENGLAND.

FIG. 6. An example of the quiet formality of the Georgian hipped roof. Note the pediment over the entrance.

There are as many possible varieties of hipped as of gabled roof, produced by the in-

tersections of hipped roofs over projections of the building, and by the varying slopes. The difference in expression, for instance, between the hipped copper roofs of the Columbia University buildings, low and simple, and the great slate roof of Chenonceaux, or between either of these and the quietness of an English Georgian manor, will give some idea of the adaptability of the form. Combinations of hips and gables can be delightfully used, too, as when the entrance wing or pavillion of a building is capped by a gable or pediment, while the rest of the building's roof is hipped.*

Last of all in our list of roof forms comes the curved vault, and especially the dome. The dome is, perhaps, the most monumentally beautiful element in all architecture, for its height, its appearance of breadth, its solidity give it a unique position. It combines the soaring lightness of the spire with the solid strength and breadth of a Greek temple. Yet, like all precious things, it must not be misused. Its form suggests size, suggests tremendous spaces covered, tremendous power and dignity. A small dome on a large building, unless a mere unaccented and minor feature, like the dome on the

* For a French Renaissance hipped roof, see the Plate opposite page 284.

observatory tower of the Paris Sorbonne, is almost a contradiction in terms. A glance at the National Gallery in London will show the meanness of such a dome. Not that a small dome can never be good; there are many lovely domed tombs, but in every case where such a building is beautiful, the design is such that the dome is all inclusive, such that there is no roof but dome, so that relatively it seems very large. In large buildings the dome must be large; it must dominate or fail. This is seen in some of our early state capitols. The architects had grasped the beauty of the form itself, but they had not grasped the fact of its necessary domination; they made it too small. The dome should always dominate, for it is such a strong motive in design that it must be made the crown and head of all. A dome playing second fiddle is irrational, inconceivable, confusing, bad.

The charm of a dome seems to lie in its continuous and ever-changing curvature, and yet the fact that it is the same seen from all sides. It is at once the most varied and at the same time the most unified form at the architect's command, and as such its fascination has laid hold of us all. It has built itself into our literature, even into our fairy lore.

"In Xanadu did Kubla Khan
A stately pleasure-dome decree,"

wrote Coleridge, and when an artist paints heaven, or some fairy city of his dreams, he paints it many domed. The Taj Mahal in Agra, that incomparable mausoleum, Santa Sophia crowning the rising profile of Constantinople,* Saint Peter's seen from over the Campagna, like an iridescent dream, Saint Paul's rising grey and powerful out of the London smoke, the Columbia University Library crowning its many columned entrance so graciously and powerfully, all these bear witness to the superlative influence the dome has had over the imagination of the world.

It is powerful over our imaginations still. It is not without reason that our national Capitol is crowned with a mighty dome, and that our states are following its example. More and more we shall see domes built over our churches and halls. Modern tile construction has made the dome reasonable in cost and easy to build, and as our national mind gets more and more sensitive to æsthetic values, more and more appreciative of the true worth of strong grace and

* See the Plate opposite page 90.

decorative simplicity, more and more anxious to see its dreams realized, it will more and more demand domed buildings; and if the national mind demands domes, one may rest assured that domes will come to be increasingly built. The idea of the dome is too deeply implanted in the human imagination to be long denied its rightful expression; there is in the dome too much of the simple beauty of over-arching blue sky, and too much of the majestic strength of rounded hills, for it ever to be forgotten.

Such are the main types of roof at the architect's command, and such is their fascination. And yet you may walk our city streets for miles, and see no roof at all. Our skill in making our buildings watertight has destroyed the necessity for the sloping roof to shed rain and snow, and our close economy, our demand for space, and our hatred of spending a cent more than is absolutely necessary have forced our buildings into cubes—cubes topped with spider-legged water tanks, and shoddy sheds, a chaos of ugliness. Let us outgrow this ugliness. Let us build as many sloping roofs as we can. Let us educate ourselves and our neighbours until we realize the shame of our present roofs and

SANTA SOPHIA, CONSTANTINOPLE, TURKEY

The domes seen are the actual constructive domes which vault the interior; the gradual building up from ground to summit is exceedingly effective.

their excrescences, and demand that this condition be ended, for when we demand beauty we shall get it. There is an immense feeling of relief produced when, in any of our cities, one comes to a building, be it church or house or office building, with a real roof appearing and the spidery tanks concealed. All praise to our newer skyscraper architects who have given New York the Woolworth Building, and the Metropolitan Tower, roofed in the sight of men as well as of birds. Their good influence will grow, and in the future we shall have cities many domed and many roofed; where flat roofs are necessary, they will be treated with lovely parapet and airy pergola; they will be busy all day with playing children or resting mothers. The city of the future will be a city with its roofs redeemed, made into objects of pleasure to the eye, and of use to the community; a city whose roofs will be its crown, and not its disgrace.

But a building, we have seen, must have more than walls and roof; it must have means for entrance and exit, and means for admitting light and air; it must have doors, and, in most cases, windows. The door is a development from the

simple hole for entrance of a cave or a hut. As men began to build more skilfully, they came naturally to build these holes square, by putting two upright members at the sides, and one on top horizontally. Eventually, they began to decorate these three members, and the ornamented doorway was the result. Later, as they grew still more imaginative and daring, they began to widen the size of the opening, until a point was reached at which they could no longer procure a stone or wooden beam strong enough to span the door and support the wall above. At this point, then, they stayed until some genius had the brilliant idea of placing two stones over the opening, inclined towards each other, resting on the sides of the door, and leaning on each other above in the middle, thus forming a triangular opening. Then they probably used three instead of two stones, and then more, until they had developed the arch. This we can only conjecture, as the history of the arch is lost in obscurity. The famous Lion Gate in the city walls of Mycenæ is such a primitive triangular arch; but either from love of decoration, or because of the tradition of square-headed doors, the builders put an ordinary beam or lintel of

stone under the arch, and rested on that a triangular stone carved with two lions, that fills entirely the opening above. The more developed types of arch, semicircular, segmental or pointed, have been favourite doorway forms ever since.

The doorway, or gateway, round or square, became early one of the chief places for decoration. Particularly was this the case in great buildings like temples or palaces. There may have been a desire in the builders to awe one approaching, to give notice to him of the divine or human majesty into whose presence he was entering, so that the doorway was made the most tremendous and beautiful portion of the whole exterior. So the mediæval artists carved their church doorways with saints and virgins, virtues and vices, or set the last judgment streaming across above, surrounding the entrance with all the pageantry of beauty and fear of their wild and tender Christian mythology.

There is another reason, too, why the door should be decorated. The doorway is the entrance, and the effect of a building should be such that one approaching would go instinctively to the door, rather than to a window or

around the corner. For this reason the door is made, often unconsciously, the artistic magnet of the outside of a building, so that one is not confused by varied interests, but attracted inevitably, though unconsciously, to the door, the most beautiful feature of the whole. Our apartment house architects have grasped this bit of psychology only too well, but, alas, their idea of magnetic attractiveness is too often ostentation, their idea of beauty too often mere florid and ill-considered ornament; and a badly designed, over conspicuous door is like the clothing clerk in a slum store who seizes you by the arm as you pass, shouting, beseeching, almost threatening you to enter and buy. With what relief after such an experience you go to a high-class and well-served shop, or listen to low and modulated voices! It is with such a feeling of relief that one turns from the hideous monstrosities of many of our apartment house entrances to a truly noble doorway like the great doorway of the Pantheon.

The decoration of all doors is of two types. It can be either a frame around the opening, as in the Pantheon doorway, with or without a cornice above, or it can emphasize the support-

ing character of the sides in some more definite way. The first scheme is the quieter of the two, and it can be just as monumental in effect; it is certainly the commoner. It can be seen in the wooden trim of almost any modern door. The difference between good and bad in these decorative door frames is impossible to define; it lies in a general way rather in a question of proportion than in any rules of what decoration may or may not be used. The frame, or architrave, as it is called in the classic styles, must not be so wide as to seem to overload the door, and press it in, for a door, above all else, must never appear constrained. Nor must the frame seem attenuated and wire drawn. Hardly more than that can be said; it is for the reader to investigate door frames for himself, noticing always the proportions between frame and opening, and in the frame itself looking for a certain element of strength and quiet dignity, and, besides, a subtle play of light and shade over the mouldings and faces, usually more complex on the outer side of the frame, that modulate between the dark of the opening and the quietness of the wall.

In the second form of door decoration, the

decoration does form a frame around the door, but this frame is not continuous, the uprights and the lintel, or arch, above them being treated in differing manners. For instance, the uprights may be decorated with pilasters or columns and the lintel above treated like a little entablature. In Gothic church work the principal doors are usually treated with columns, and the arch above them carved into bold mouldings; this is but a variation of the same scheme. It was very popular in the early Renaissance in Italy, and to a certain extent here in the United States in Colonial times for front doors, in a charmingly gracious way which is worthy of our emulation.

Very often these two schemes of decoration were combined. That is, some treatment of columns and pilasters, with arch or entablature above, is placed around a very well marked and continuous frame that encloses the opening; and the projection of this from the wall may be increased until there is produced a genuine little porch, and this may be crowned with a gable or a pediment.

Even the richness from this double decoration, however, did not satisfy certain splendour-

loving peoples, for whom the door was the all-important feature of the exterior of a building. Consequently, they made the door itself a mere centre for an immensely rich piece of decoration that often ran several feet on each side of it and the entire height of the building. Mohammedan nations seem to have done this first; it is almost universal with them. In certain of the Persian mosques, for instance, the door itself is set into an arched niche often forty or fifty feet high, and the whole is encrusted with wonderful coloured tiles. So, in Constantinople, many of the mosque courtyards are entered by gateways set into decorated niches running up the entire wall, and often there is still further importance given to the composition by crowning the whole with a dome. The grandeur possessed by such an entrance set in a long stretch of simple wall is very great, and the beauty of this accent and this contrast is exceedingly effective. Among all the Moorish influences upon Spanish architecture this method of door treatment is preëminent. The Spaniards seem to have felt at once the impressive charm of the great Moorish doors, and set out to adapt it to their own uses and their own forms. In this

they succeeded to a remarkable degree; and perhaps the most beautiful things in all Spanish buildings are the doorways and gates, masses of delicately frosted ornament framing the dark door, mounting tier on tier to the cornice itself, set in a severe and unornamented cut stone wall.* Even in the worst days of the Spanish baroque, when contortion of every form and complexity of every surface were the vogue, the gateways still retained a compelling power and loveliness. The main building of the San Diego Exposition of 1915 bore convincing evidence to the beauty of this doorway treatment. Its exuberant ornament, so wild and florid and yet so carefully studied, piled high around the door against an absolutely plain wall, makes this building perhaps the most valuable architectural gem of both California Expositions.

Growing, as they do, out of similar original and primitive holes, it is not strange to find the decorative treatment of windows closely analogous to that of doors. But given the same two schemes, frame and post and lintel, it is remarkable how the treatment of doors and windows grew apart, for while the purpose of a door is to admit people, the purpose of a win-

* See the Plate opposite page 208.

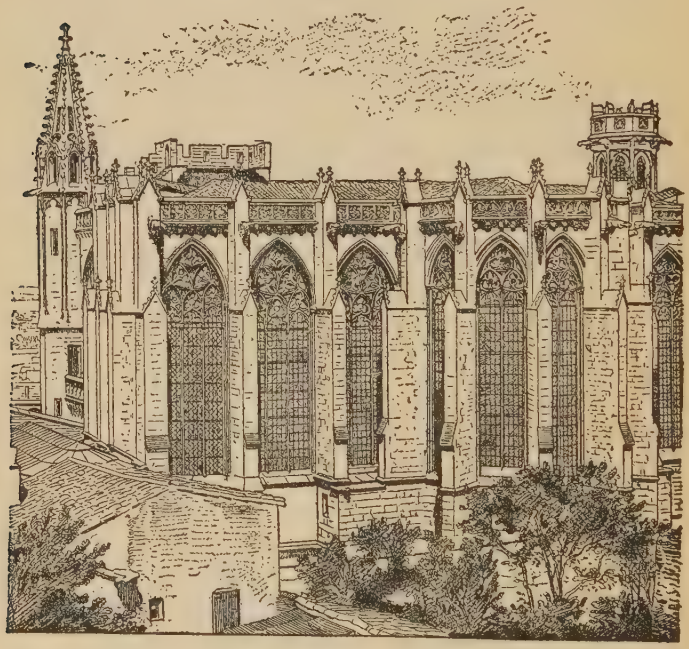
dow is to admit light, and the shapes suitable to one are not necessarily suitable to the other.

In Rome and Greece, where so much outdoor life was possible, windows were small and inconspicuous, and it was not till the application of glass to window design that they became important. Pliny tells us that in Rome, in his time, at least, glass had come to be used for windows, and that in villas they had sometimes an important function to perform. The true development of window design, however, did not come until the Middle Ages, and is completely bound up with the development of the Church. Windows in a classic temple were not necessary, for the great sacrifices and public ceremonials were always out of doors. But Christianity demanded places of worship capable of receiving crowds of people, and a prime requirement of this new form of worship was light. So windows were increased continually in size and number, till some of the later Gothic churches are scarcely more than walls of glass.*

At first these windows may have been mere openings, unglazed. Later, as glass came to be more common, the windows were filled with glass, probably in very small pieces, joined in

* See Fig. 7, page 100.

a pattern by little "H" shaped lead bars. Such a window is never strong; it can be made only in narrow widths, even when reinforced with iron bars. The whole development of Gothic architecture from the dark, heavy-walled



Cathedral of Saint Nazaire, Carcassonne, France.

Fig. 7. Gothic window development at its climax. Wall surfaces are reduced to a minimum, with enormous arched windows occupying their place.

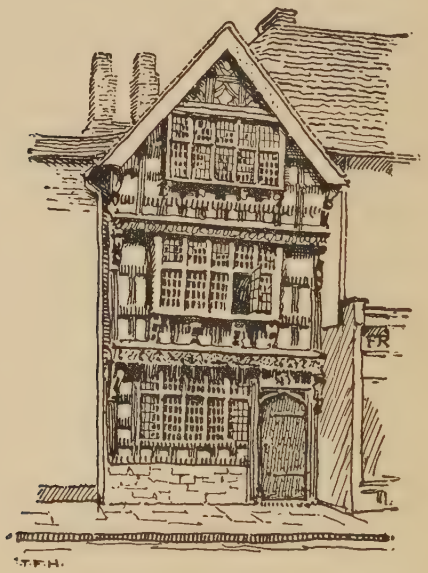
Romanesque churches of southern France to the brilliance and airy lightness of King's College Chapel in Cambridge, England, or the cathedral of Carcassonne in France, was one long struggle to get much window area, much outside light, into a stone-vaulted church.*

One of the early innovations in this struggle was the grouping of two or three long, narrow windows under one great arch. Later, a circular window was placed above these smaller windows to fill up the space—or lunette—under the arch.† This was the origin of tracery; with this beginning it was but a step to the entire reduction of the wall between the grouped windows and the rose above them to a mere framework, and then the elaboration of this framework into the glory of the best Gothic tracery, as seen in the transepts of Notre Dame in Paris, or the west front of York Minster in England. In Germany, tracery was developed to an even greater extent, but without such consistent success; for the German longing for the bizarre and the grotesque came finally to overbalance good taste; tracery was forced into weird and fanciful naturalistic forms, such as

* See Fig. 7, page 100.
† See the Plate opposite page 102.

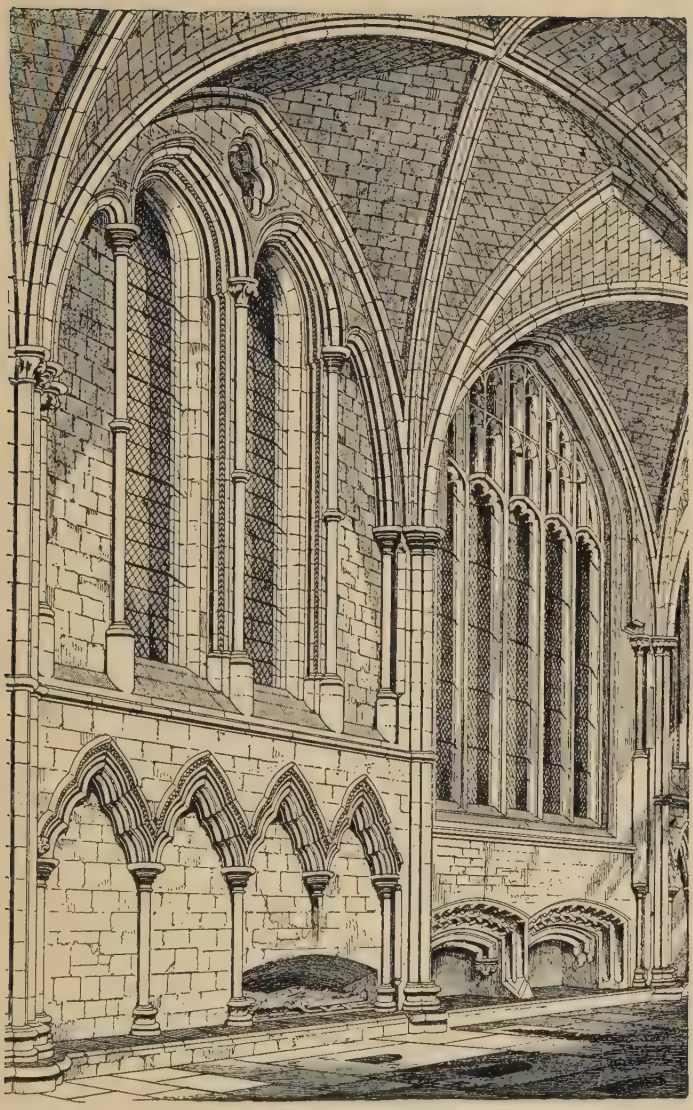
branching trees or the national eagle; and the novelty of these can in no way compensate for the loss of the dignity, the strength, and the simplicity innate in the more structural tracery of the French and English.

Of course, the churches, the monuments of the community, enjoyed the luxury of glass to a



HARVARD HOUSE, STRATFORD-ON-AVON, ENGLAND.

FIG. 8. Small-paned, leaded windows add greatly to the charm of quaint half-timbering.



CARLISLE CATHEDRAL, ENGLAND
(TWO BAYS OF THE CHOIR)

An interesting example of early "plate" tracery (two small windows under one large arch), and the elaborately developed "perpendicular" tracery side by side.

large extent before its use came to be common in the house. Even in many comparatively recent English cottages in out-of-the-way villages one may see windows few in number and tiny in size, made so because glass was prohibitive in cost. But in towns and in the great houses glass was used more and more extensively, until Francis Bacon, in the time of Queen Elizabeth, complained that some of the houses of his day were built of glass rather than of brick or stone, so that in them was neither shade in summer nor sufficient shelter in winter.

The great charm of most of the early glass lies in the fact that it is always used in small panes, separated by lead or wooden bars, which break up the surface, and thus prevent the windows from looking like mere black holes in the wall.* This is an effect all too frequent in our modern architecture. Our ability to make large sheets of clear, unruffled glass has led us in some cases astray, for in little houses we find large, unbroken panes where the use of the small panes of our ancestors would be immensely more attractive. Imagine a modern half-timbered house, or a modern Colonial house with sheets of plate-glass in the windows. Then look

* See Fig. 8, page 102.

for a real old New England house, with its small oblong panes, or a house more severely in the old English fashion, with each window subdivided into myriads of tiny pieces by simple leading, and compare the results. There is a true texture, a feeling of continuity about the small panes totally lacking in the others; there is, besides, a certain charm of simple homeliness that is most appealing. Of course, there are exceptions; in the presence of a wonderful view, for instance, of sea or highland, or far flung city streets, where bars or divisions would break up the whole, a large sheet of plate glass may be quite excusable, and seem the correct solution. In such cases small panes would be an ostentation.

Our cities are wildernesses of many windows that are mere black holes in the wall because there is so little subdivision. In business buildings, particularly store and loft buildings, our builders seem to have striven, with disastrous results, to see who could use the most plate glass to the least area of wall space. The new Lord & Taylor store in New York shows how beautiful a show window can be made with a decent regard for the apparent strength of the build-

ing; yet just a few streets below, with this lovely example so near, another architect has constructed a monstrous building the entire weight of whose heavily-ornamented walls seems supported on one unbroken stretch of plate glass. Would we had another Bacon to complain as eloquently about this unnecessary and ugly ostentation, for his strictures are even truer of buildings like this than of the many-windowed manors of which he was writing.

There still remains to be considered the last of these exterior structural necessities, in some respects the most fascinating of all, the chimney. Primitive man had to have a fire. At first it was probably outdoors; but further to the north where it was needed as well for heat as for cooking, men came to build fires inside their houses. Then came the necessity of letting out the smoke; and so men came to build chimneys. Chimneys are of comparatively recent date in the history of mankind; primitive tribes are still content with holes in the roof. In the uplands of lower Hungary the peasants' houses are chimneyless to this day: as one winds through the fascinating valleys of that picturesque land one can see from the very train windows village

after village apparently on fire, for every cottage has a wisp of blue smoke curling out from the top of each deep-eaved gable; those openings are the cottage chimneys. One hates to imagine the condition of the inmates of such a smoke-filled house. Such a solution of the indoor fire could never satisfy a more sensitive or more inventive race of mankind. The smoke rose; so over the hearth men came to build a vertical chimney. It is not known when chimneys were first used; but in the Middle Ages they became common, and their artistic possibilities came to be recognized.

It is in the northern countries of Europe, as one might imagine, that chimneys came to be most highly developed. To this day Italian chimneys are tiny, unimportant affairs, made as low and unobtrusive as possible. The Frenchman or Englishman, on the other hand, demanded more fires than his southern neighbours, and it was but natural to group all the flues from rooms above one another into one large chimney. The result was a mass entirely too large to be neglected; and the artistic genius of the people welcomed the opportunity that was thus furnished. Indeed, it seems to have

been a particularly attractive problem, for chimneys exist in numberless forms; often in buildings otherwise severe and simple, there will be a little touch of fantastic playfulness in the chimneys that cheers and wonderfully warms the whole effect.

There are no rules for good and bad design in chimneys, save, of course, the one rule that a chimney should look like a chimney. There are certain Elizabethan houses, built when the classic orders were just coming into fashion, in which the chimneys are little Doric orders, each flue built as a separate column, and the flues of each chimney grouped under a little entablature for a cap. The result is amusing, but certainly not beautiful or satisfactory; the roof of Burghley House, 1570-1583, for instance, looks like a plateau covered with some great columnar building, roofless and ruined; to discover that this group of columns is made up only of chimneys is a decided shock. Earlier and later than this date the English were more fortunate in their chimney design; they were immensely skilful in the use of brick and stone, twisting the chimney shafts, making them polygonal, varying the design all over the house, so

that in every shaft it was different; building this lightness up from a solid base, and crowning it with a moulded cap. Later, when they built their chimneys solid, they were equally successful, often emphasizing each flue with a little terra cotta chimney pot above the cap, and panelling delicately the sides of the whole. In France the art of chimney design was equally advanced during the Renaissance; but the French chimney was always more monumental and less informally charming than the English; the French loved high stone chimneys, panelled in formal designs, and topped by architrave, frieze and cornice, so modified as to appear frankly what they are, chimney caps.*

We city-dwelling Americans are losing the chimney feeling. With gas ranges and steam heat, chimneys are almost a rarity in most of our cities; that is one reason for the dreariness of New York or Chicago roofs, when compared with the roofs of Paris or London or Strassburg. There are no crowded, smoking chimney pots by thousands to make one dream of the cheerful fires below and the thousand homes. Somehow the vent pipes to our drains do not invite dreams; charm in them is hard to find. No,

* See the Plate opposite page 284.

to us who dwell in cities the romance of chimneys is of another kind; it is the romance of industry, of towering, slender columns seen over grey, busy harbours, belching their billowing smoke across an evening sky.

Therefore, it is all the more important that when we Americans build our homes in the country, summer houses or farmhouses, we should build an adequately chimneyed house. We must remember the comfortable and dignified houses of our elders, with their massive brick chimneys and all the charm of endurance and homeliness they bring. We must not be satisfied with little, insufficient chimneys scattered willy nilly over the roof; we must see to it that the house is so planned that its flues will group into massive and dignified chimneys that compose well with the whole design.

These five classes practically complete the structural elements with which the architect deals in the exterior of a building. Walls, roofs, doors, windows, chimneys; it is from these simple elements that the designer, by careful treatment of the forms themselves and by their careful combination and composition, and the addition of a certain amount of decoration,

evolves a whole to delight our eyes and to satisfy our minds. The simplicity of the list is the architect's limitation, but it is at the same time the reason for the tremendous beauty of architecture when it is good. Architecture, because it deals with such simple elements that everyone can understand, should, of all the arts, have the most universal appeal.

SANTA SOPHIA, CONSTANTINOPLE, TURKEY
(INTERIOR)

The walls are entirely sheathed with sheets of veined marble. Note the Byzantine use of intricate surface ornament. See pages 114, 176.

CHAPTER IV

THE ARCHITECT'S MATERIALS—*Continued*

It has been the custom of architectural historians to lay entirely too much stress upon exterior architecture. One might almost suppose from their writings that architecture was mainly the construction of a mere artistic shell, whose kernel was of no importance. Half of those who are not interested in architecture base their lack of interest upon the fact that architecture is something dealing with luxurious and inessential external ornament which concerns them and their interests but slightly. In reality, the whole evolution of architecture proves the contrary; almost every important development of architecture was produced not by any desire for mere external grandeur, but because changing conditions had rendered necessary new internal requirements. Egyptian architecture is largely a matter of interior design, for the temple courts are almost interiors, the hypostyle halls certainly so. The ex-

ternal grandeur of Greek temples arose from the desire to give fitting expression to the supreme glory that resided within. The greatest contribution of Roman architecture to civilization —their great vaulted halls, and the systematic, elaborated planning of their colossal structures —is a result of the demand for impressive interiors. The Byzantine tradition of great domes was the result of the attempt to produce a tremendous church, and the whole development of Gothic architecture was a striving for the perfect church interior. It is the same throughout the ages; and those who consider architecture as a matter purely of exteriors are considering only a small portion of the whole great field.

In studying the structural materials at the architect's command, then, it is important to consider the internal requirements of a building, as well as the external requirements. There are great similarities between the two, but there are great differences as well, for the whole purpose of the exterior of a building is to protect the inside from the weather and from objectionable people, while the entire interior, being so protected, must be so treated as to fulfill most perfectly its specific needs.

The similarities lie, then, in the main absolute necessities which confront the architect, and the differences mostly in their treatment. As before, the first main requirement is wall, and in general the same apparent solidity of treatment is required on the inside as on the outside.

But a greater freedom is allowable in the treatment of all interior features, for several reasons. In the first place, the interior of a building is protected from all attacks of the weather; and this at once allows the architect great latitude in the material he uses, and suggests a greater richness and delicacy of surface. In the second place, when one is inside a room, the whole scheme of a building is not usually evident, as it is to one outside, and consequently there need be no such expression of structural strength to satisfy the eye. And lastly, inside a building you have usually a closer view of all the architecture of the interior than one outside is likely to get of the exterior.

For these reasons, then, a great deal of freedom is allowed the architect in his design of a building's interior. Stone walls may be panelled deeply, and broken with many rich mouldings. Sheets of white or coloured marble may

be used to produce tremendously rich and varied effects, as in Santa Sophia in Constantinople,* or the church of Santa Maria dei Miracoli in Venice,† or the walls may be mosaiced in rich and gorgeous colours, or painted.

In smaller, less formal buildings, a sheathing of wood panelling may be used, or a simple surface of plaster, plain or tinted or papered. All of these varied treatments are good in their places; but in all the feeling of wall should in general be preserved and the best mosaic and the best wall painting is usually that in which there is some touch of conventionalization, some flat unrealism of colour or drawing that gives a feeling of continuous solidity and strength to the whole decoration. There are exceptions: there are informal places where a realistic decoration that frankly makes a "hole in the wall" is very beautiful; it may serve to lighten a dark room, or enlarge a small room, but as a general rule the greatest of the decorators have always considered and emphasized the fact of the solidity of the wall.

Of all the less expensive and more informal types of wall treatment, there is none more

* See the Plate opposite page 110.
† See the Plate opposite page 116.

adaptable than wood panelling. The rich gorgeousness of a Louis Quinze boudoir and the simple homeliness of a Colonial kitchen are examples of the extreme variety of effects that can be produced in it. One reason for this lies in the fact that wood panelling is in itself a structural form: a form developed naturally from the qualities of the wood itself. In addition, almost every wood has such an interesting texture of veining, such subtle variations of surface and colour, that it is in itself a delight to the eye, and a delight we must cultivate and demand. Let us, by all means, have more panelled rooms, for a well designed Georgian hall, with tall and stately panels, or a small and cosy library wainscotted high with small panels of dark oak, might each be more than rooms; they might be real works of art, sincere and unostentatious and beautiful, to be treasured by our children as we treasure the panelled rooms of our ancestors.

Above all else one must be wary of fads in the treatment of wall surfaces. Let curtains and hangings and furniture be futuristic, impressionistic, realistic, radical, reactionary, what you will, decorated with all the "isms" of art,

if you wish; but when one comes to the choice of a wall treatment, he had best cast aside all thoughts of "style," or period, or theory, or fad, and think only of what will be strongest in appearance, most beautiful, most suited to its purpose and to his pocketbook, and above all, of what will possess the most repose.

If repose is a *sine qua non* of wall design, it is even more indispensable in the design of floors. The floor in the landing of the grand staircase of the Ducal Palace in Venice, for instance, is of black and white marble so designed that it seems, despite its real flatness, to be made of cubes set cornerwise—a myriad of points sticking into the air. Such a floor is an abomination; one is almost afraid to step on it for fear of hurting one's feet. Similarly, any floor in which the appearance or sense of flatness is lost, is a bad floor. This is true whatever be the material. Mosaic designs realistically picturesque are bad; so also are loud-coloured carpets or those in which the pattern is so pronounced that it seems to rise from the background. The charm of good Oriental rugs lies in the fact that despite the richness, even the gorgeousness of the colours, sometimes mingled bright reds and

SANTA MARIA DEI MIRACOLI, VENICE, ITALY
(INTERIOR)

An example of the beauty of walls sheathed simply with delicately veined marbles.

yellows and even whites, they are so interwoven and blended in the intricacies of the conventionalized design that the rug never seems to be anything except one flat plane. So, coloured marble or tile floors are only successful when they have this appearance of being absolutely flat.

This, then, is the one criterion of floor design. Stone or brick, wood or marble, tile or carpet—this one requirement must be fulfilled, for it was in the desire to give himself a flat and dry surface to walk on that primitive man first smoothed his cave's earthen floor, and later covered it with flat stones, or boards of wood, or skins or cloths; and this flatness that man has with so great effort perfectly attained, he will not, even in appearance, forego.

But man needs not only walls around and a floor below, he needs even more than these, a covering above; so, corresponding to the roof on the outside, there is the ceiling within, as the next structural requirement of a building. In some cases, as in certain churches and great halls that extend the full height of a building, the ceiling is merely the interior of the roof. If the roof is a sloping one of timber all the structural parts are exposed—the rafters, the under

sides of the roof boards, the trusses that support the whole—and these may be treated so richly that the effect becomes not one of poverty, but of luxury. There is something tremendously impressive in such an "open timbered" roof: the combination of the naked all apparent strength of the supports, with the richness of light and shade of their criss-crossing, complex yet systematic, in the shadows above, is well nigh irresistible. Memories of Westminster Hall in London, or the Hall of Hampton Court Palace, of English Tudor churches, of the rich colours of the San Miniato ceiling in Florence throng to the mind in confirmation, and make one wonder why for so many years this form has been so rare among us. Lately it has come into renewed favour; and churches and halls and libraries more and more throughout the country bear witness to its puissant charm. The chapel of the Union Theological Seminary in New York City, the great dining-hall of Yale University in New Haven, the simple and dignified Protestant Cathedral in Albany are but a few examples; the list might be extended tremendously, and, it is to be hoped, will grow each year.

* See the Plate opposite page 120.

Somewhat the same charm of strength and complexity exists in a frank treatment of steel-framed roofs, particularly when combined with glass. The train concourse of the Pennsylvania Station in New York is a superlatively lovely example of the kind of thing which should be common. The truth is, we are not used to steel, even yet. It has been the origin of so much engineering ugliness, that one forgets that it can be made a means of architectural beauty. Our æsthetic hatred of steel is a heritage from those pre-raphaelite days when steel and iron meant system and machinery, and machinery meant all that was evil. This prejudice, moreover, is not lessened by those extreme radicals who shout for steel everywhere, those who, like the Italian futurists, and still more like the proverbial small boy with his new toy, would write "wanting" against every old established architectural form of the past, and upon that vacuum evolve a colossal architecture of steel monstrosities. No, this prejudice against steel can only be successfully overcome by the increased careful use of steel by our architects themselves; and the use of it with restraint and common sense. All praise, then, to the design-

ers of that lovely miracle of lightness and security and grace in the Pennsylvania Station just mentioned, in which stone and steel and tile and skylight seem combined in almost perfect proportion. May there be more like them, working on the same problem and developing its possibilities further, with equal success!

The ceilings we have treated of so far have been merely the insides of roofs, but there is an immensely larger number of buildings whose ceilings are below the roofs, and to a large extent, separate from them. There are, besides, the ceilings that are the under-sides of floors. There is one large class of ceilings in which the floor itself forms the ceiling and all the beams and girders which support the floor boards are exposed. In rooms of a certain size and height there is the same structural charm in a ceiling of this kind that there is in an open-timbered roof. In the Palazzo Davanzati in Florence there are several ceilings where two or three great girders span the room, with smaller beams closer together running from one girder to the next; and almost uniformally such ceilings are handsome. They have a sober dignity about them that neither the vault, more

WESTMINSTER HALL, LONDON, ENGLAND
(INTERIOR)

This hall owes much of its beauty to the strength, the grace, and the mystery of its magnificent open-timbered, trussed ceiling. See page 118.

grand or more graceful, as the case may be, nor the flat plaster ceiling can ever have. But they have their drawbacks, too. In the first place, anyone who has lived in an unceiled country cottage knows that such a ceiling is tremendously noisy; the drop of a pin on the floor above reëchoes as if it were a spike, the fall of a shoe is an explosion. In addition, such rooms are cold, and there is no space for running electric wires or pipes, so that it is small wonder that some sort of covering below the beams has come to be almost universal. In some cases it is possible to combine the delight of one with the comfort of the other, by plastering directly under the small beams and letting the larger project below, or, by putting the plaster at a level half way between the floor and the bottom of the beams. Sometimes the effect is imitated by building false beams below the ceiling. This is, strictly speaking, hardly legitimate; it savours too much of the "fake," but at times effects can be produced so delightful, and apparently so indispensable to the design of the room, that it is quite excusable. It is at best a means to an end; at the worst, it is an artistic insult; as when the speculative builder puts tiny sticks two

inches square across a ten-foot apartment room, and thinks thereby to produce "atmosphere." Better a thousand times the inoffensive simplicity of plain plaster than this.

The beamed ceiling was developed in the Renaissance to a splendid perfection. The Italians found in time that the simple method of the Davanzati ceilings could be varied. They made all the beams of the same depth, and crossed them at right angles to each other, filling the spaces between with square or rectangular panels, painted and moulded. Often the under side—the soffit—of the beam was itself decorated; and sometimes the beams were so arranged as to give large panels in the centre, decorated with huge "mural" paintings, with a frame of simpler, smaller pattern around. Then came the use of diagonal beams, and curved beams, until there was no limit to the variety of designs possible, with octagonal or square or oblong or star-shaped or oval panels. Such ceilings have a richness that is most effective in large rooms: and as they developed frankly into decorations at the end, one feels no qualm at seeing the beams used merely as a decoration, and not at all as a support for the next floor.

The colour of the wood, the shadowed panel mouldings, dull gold, perhaps, the paintings in the centre; here is an alphabet of decoration, indeed. Go to the New York Public Library, and look at the ceiling of the main exhibition room; then go upstairs to the main reading room, and look up. There is richness, there is strength, there is delicacy, there is warmth, there is dignity. No other type of ceiling in the world could give just that effect of studied charm and rich simplicity.

Still more interesting than these flat ceilings are those curved ceilings we know as vaults. The vault is, in its simplest form, merely a continuous arch. This is the form in which it was first used; in the beginning for drains, and later, in those countries in which beams of stone or wood were hard to get, as a covering for buildings. The long, narrow halls of the great Assyrian and Babylonian palaces were undoubtedly ceiled with barrel vaults; but these vaults were built of such perishable sun-dried brick that they have all vanished, and only the great thick walls remain. This Assyrian tradition of vault building had an intermittent influence on the builders of western Asia; but it is entirely

to the Romans that we moderns owe the origin of all European vaulting. The Romans soon appreciated the immense opportunity offered by the vault for roofing in a majestic way great unencumbered halls; and with their customary ingenuity and sound sense they developed this new method of building to the limit. Not satisfied with the plain barrel vault, they used with greater and greater skill all kinds of intersecting vaults and domes, and so started that great tradition of vault building which has flowered so gloriously again and again all through Gothic and Renaissance and modern times.

Before going further into the design of vaulting, it will be necessary to explain a few points about the forms of the vault, and its influences upon design as a whole. In the first place, any and every vault, whatever its form, exerts, like the arch, not only a downward weight upon its supports, but a sidewise thrust as well. A vault is like a card house built upon a slippery table; unless the cards are prevented from spreading, the whole will fall. The typical arch consists of many wedge-shaped stones built together; and the weight on each of these tends to drive it

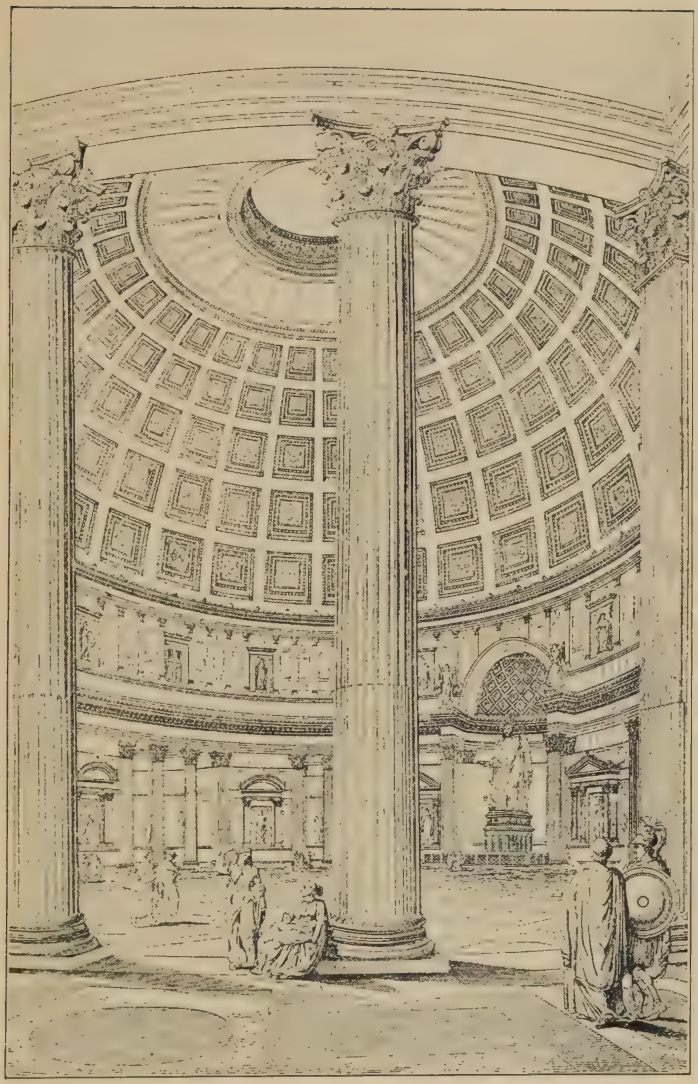
in and so widen the arch opening, more and more, until the whole collapses. The same thing is true of a vault. It is always tending to spread; and this tendency, this thrusting so strongly outwards, is called its "thrust." In a barrel vault this thrust is continuous along the whole length of the vault, and therefore the walls along the sides that hold it up must be extremely heavy, to keep the vault from spreading and collapsing. Such heavy walls are expensive, however, and the barrel vault is consequently seldom used at the present time, except in minor positions and over small spans.

The dome is a continuous arch in another sense. The barrel vault is formed when an arch is continuous over a line at right angles to its own span. Imagine this same arch pivoted throught its centre and highest point, and then spun around; the result would be a dome, a hemisphere on a circular base. This beautiful form has been spoken of before, and we need not therefore particularize any more here, for the same facts apply to the interior that apply to the exterior dome; and the resultant artistic effects of grandeur and strength and lightness are much the same. But it will be well to keep

in mind that there are several classes of domes. First, there is the Roman dome, as seen in the Pantheon at Rome.* This dome is designed with the interior effect supreme in the designer's mind; the exterior of the Pantheon depends for its effect not on the dome, but upon the entrance portico, the doorway, and the great unbroken stretch of circular wall. From nearby the dome itself is completely invisible; and it is only when one enters that superb building and sees the great dome rising from all sides above him to the "eye," the open space in the centre, that one grasps the full effect of that splendid concave curve above, with its many coffers and its perfect relationship to the walls below.

The Byzantine architects, the next great dome builders, strove for a dome equally impressive inside and out. They accomplished this by raising the dome high up on a series of smaller half domes and subsidiary vaults, so that from both inside and out there is a wonderful effect of height and spaciousness, dome building into dome, vault into vault, up to the crowning glory of the whole, the principal dome. In Santa Sophia this form of design reached an early perfect expression,† so that centuries after, when

* See the Plate opposite this page.
† See the Plate opposite page 90.



PANTHEUM, ROME, ITALY
(INTERIOR)

This matchless interior shows the compelling dignity of a simple dome when rightly treated.

Constantinople was conquered by the Turks, they used that church as a model for their greater mosques—and the glory of their domes is only second to that of Santa Sophia itself.

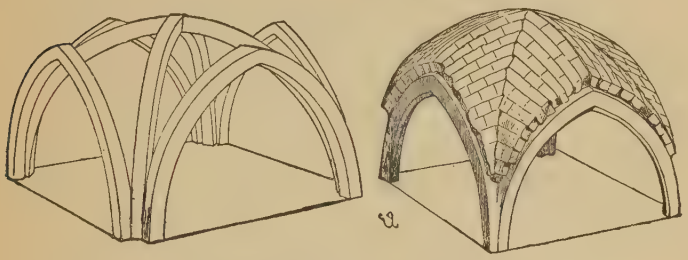
In the Renaissance, the architects strove after still different effects. They sought for a dome lower proportionately than that of Santa Sophia, more like the dome of the Pantheon; yet because of the length of their churches it was necessary to have a higher dome to give external effect. Consequently, the dome of two or even three shells was developed, in which the interior dome was proportioned with sole reference to interior effect, and the exterior one with sole reference to exterior effect. Between these two shells there was sometimes a third, built to carry the weight of the "lantern," the small, many-windowed cupola which took the place of the "eye" of the Roman dome. Such domes are those of Saint Peter's in Rome, of Saint Paul's in London, of the Panthéon and Les Invalides in Paris, and of most of the American capitol buildings.

There was another objection to the simple Roman dome besides its exterior littleness; it had the same fault as the barrel vault; it exerted

* See the Plate opposite page 216.
† See the Plate opposite page 78.

a continuous, strong sidewise thrust, which had to be counteracted by a tremendously heavy wall. The Roman builders constantly strove for some method of roofing a large space that avoided the necessity of this heavy wall; and they soon arrived at the solution, the groined vault. The groined vault consists of two vaults intersecting one another at right angles. In other words, imagine a square room roofed with a barrel vault. Two walls will have arched tops and two straight tops. Now let us take another vault of the same size, and place it across the room at right angles to the other. Then let us cut out all the superfluous matter. The result will be a groined vault; the four walls of the room will all have arched heads now, and the whole weight of the vault and all the thrust will be concentrated at the corners, at which points it is easy to build masses of masonry to counteract the thrust without making the whole wall thick. At the same time this form of vault gives a feeling of height and grandeur, and a pleasant play of light and shade over its varied surfaces, that the simple barrel vault could never have. Consequently, the Romans adopted this form of vault as their favour-

ite, and their great public baths became impressive and tremendous palaces because of its use.



GOTHIC RIBBED VAULTING.

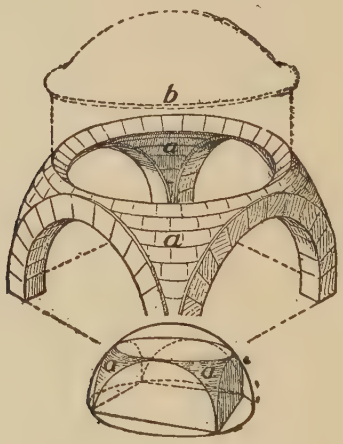
a. b.

FIG. 9. "a" shows the ribs alone; "b" shows the vault after the ribs have been covered in.

All through the Middle Ages the groined vault was the greatest form in architecture; and the development of Gothic architecture is primarily dependent on its requirements. But the Gothic architects had difficulty in raising great vaults like the Roman ones; they sought for some means of lessening the surface that had to be built at one time. Consequently, they adopted the ribbed vault. In the true ribbed vault all the ribs were built first; each, being an arch, was self-supporting.* Then they filled in

* See Fig. 9, a. on this page.

the framework with very light masonry, each space left between the ribs being built separately.* Later, particularly in England, the architects grew so fond of the decorative effect of these ribs that they multiplied their number enormously, first in a simple way, as in Lincoln Cathedral choir,† and then, as they grew more skilful, into a complex network—called lierne vaulting, as in Gloucester Cathedral. But in this development the richness of the result came to be an end in itself, and the structural char-



THE PENDENTIVE.

FIG. 10. "a, a," are the pendentives, "b" is the dome built upon them.

* See Fig. 9, b, page 129.

† See the Plate opposite page 150.

acter of the ribs was lost, until at last, in the glorious mazes of fan vaulting, so exquisitely seen in the Henry the Seventh Chapel in Westminster, or in King's College Chapel in Cambridge, the mazy ribs are merely decorations carved on the stones of a vault as uniform and non-Gothic as the old Roman vaults themselves. It is due to this non-structural nature, as well as to the lavish cost of these fan vaults, that they are little copied in our day. We try, and rightly, for richness in more structural ways.

The Renaissance vault builders went back to Roman examples for their inspiration, but the ribbed vaults of the Gothic builders had left, particularly in France, an impress too strong to be forgotten. As a result the vaults of the Renaissance are much more free and varied than those of Roman days; the builders learned alike from Roman and Byzantine and Gothic sources, and applied their knowledge with continually growing skill. From the Romans they took the groin, from the Byzantines the pendentive*—that simple method of supporting a dome over a square—from the Gothic builders the rib; and the result is seen in the charm of the loggia of the Farnesina Villa or the Villa

* See Fig. 10, page 130.

Madama in Rome, in the entrance hall of the Boston Public Library, in the glory of Saint Peter's and the richness of Saint Paul's in London.*

Our own age is witnessing a new renaissance of the vault. For a time, the ease with which large spaces could be roofed by the use of steel caused the almost entire abandonment of the vault; but our growing skill in building is resurrecting it. Certain builders and engineers discovered that a strong, light and beautiful vault could be built cheaply of tile, and more and more these tile vaults are coming into use. With this tile it is simpler to build domical vaults than vaults of any other sort, so the dome is coming into its own; and there is a certain new sort of Byzantine character produced by its use. These tile vaults and their proper treatment are a new thing; they are a truly original contribution of modern America to the stream of architectural development; therefore let us appreciate duly their beauty and sincerity. The growing use of the tile vault is one of the most hopeful æsthetic signs of our times; and we may look confidently forward to the time when they shall beautify

* For another fine Italian Renaissance example, see the Plate opposite page 134.

not only our churches and monuments, but our homes as well.

Of the interior treatment of doors and windows, little need here be said, for all that is true of their exterior treatment holds true of their treatment within, save that, as in the case of the wall, a greater freedom is allowable. There remains, then, but one more structural requirement to consider, the pier and the column, and of the column most of what is to be said belongs in the next chapter, for at the present time the use of the column is almost entirely decorative. As for the pier, it is in essence merely a post, placed as an intermediate support where the width of a room is too great to be spanned by one beam or one vault, or placed to subdivide a large room into separate units that shall still be part of the whole. As time went on men came to cut the corners off, to allow more ease of communication around the post; later still they rounded the whole into a column. In the great temple halls of Egypt these columns were used by the hundred, giving an impression of tremendous mystery and size. In the more northern countries, where wood was more abundant, the column was probably de-

veloped from the use of a tree trunk as a support. The round column has a grace that the square pier lacks; on the other hand, the pier has a strength and simplicity beyond that of the column. Each is good in its place, and some of the most impressive buildings in the world owe a great deal of their success to the careful use of both pier and column, each contributing its particular note to the beauty of the whole. For an example, see the lovely cloisters of Santa Maria della Pace in Rome.* Note how the contrast of pier and column is used on the second story to suggest the pier and arch below; and see, too, how exquisite is the balance and the rhythm of the whole.

The pier is such a simple element that little was done to elaborate its form greatly, save in details as by giving it a cap and base—except by Gothic architects. The Gothic architects were avid of structural expression; and once given their ribbed vaults, it was but natural for them to wish to see the feeling of the ribs carried down to the floor. This they did by making the pier very complex in plan, with a strongly marked projection under each rib. The accumulated richness of the vertical shadows

* See the Plate opposite this page.

CLOISTER, SANTA MARIA DELLA PACE, ROME, ITALY

An example of the grace produced by the changing but related rhythms of the two stories.

VESTIBULE TO THE "HALL OF THE TWO HUNDRED," PALAZZO VECCHIO, FLORENCE, ITALY

An example of the charming effects which the Renaissance artists produced with painted vaults.

on such a moulded pier led them eventually to treat this complex pier for its own sake, and to mould it richly without regard to the ribs above it. Their successors, the people of the Renaissance, went back to the simple pier, breaking it only slightly, with pilasters—as in the Santa Maria della Pace cloisters—or even treating it as a simple rectangular piece of masonry, unbroken.

These, then, are the structural requirements that an architect must treat in his design; these are the usual units of every building that he must make beautiful: wall, roof, door, window, chimney, ceiling, vault, supports; these are the things he must supply. These, too, he must compose and arrange in a beautiful form before he even thinks of the details of his decoration; and it is these necessary elements which those who wish to appreciate architecture must understand first and analyze first and appreciate first; for though the greatest buildings are not only beautifully composed, but beautifully decorated as well, decoration is secondary, and no amount of ornament, however lovely, can ever compensate for bad composition. The essentials of a building, the necessary parts, and their

relations and arrangement, must always be first in the minds alike of architect and critic; only thus can fine architecture be conceived and adequately appreciated.

CHAPTER V

THE DECORATIVE MATERIAL OF ARCHITECTURE

The two last chapters have attempted to show how the structural necessities of a building were used to produce an artistic end by their composition and grouping in accordance with the demands of beauty. This use of structural elements, if rightly handled, will produce a building that has beauty; such a building may even have great and striking beauty, because of its absolute simplicity. Such a building, however, even in its beauty, has a kind of naked, unfinished look about it; although it may appear to have a great and rugged strength, it will seem to be rather a work of engineering than of art. From the earliest times mankind has decorated those things which are useful, letting his imagination play over the forms he requires, until he makes of his necessity a thing of beauty as well.

This tradition of decoration, which has become almost a psychological necessity, does not lose its force when the necessary object is beautiful in itself; indeed, quite the reverse is the case; for the beauty innate in it furnishes the decorator with a tremendous inspiration to start with, and gives him the supreme opportunity to show his genius. This is the case in architecture; always the purely necessary part of the building, the structure, however beautiful in itself, has been an invitation and an inspiration to the world's architects, and has furnished them opportunities for creating beautiful works of a great art that forms, next to literature, the most perfect expression and the most perfect evidence of the world's life.

The position of this decorative element in architecture is very large. To some critics, of whom Ruskin is the foremost, architecture is merely decoration, nothing more; and they judge architecture merely by its ornament. This point of view is as one sided as that of some engineers, who think all architecture a waste of time and money, because they could build buildings equally strong more cheaply. To the great

majority of men and women either extreme point of view is equally absurd. To them always the beautiful building has meant a place to work or play or rest, as well as an artistic emotion, and a house has meant not only a roof above, but beauty within and without, as well.

It is true, therefore, that an adequate appreciation of good architecture can come only from the double knowledge of structural and of artistic elements, from an appreciation of ornamentation as well as an appreciation of building in itself. This double knowledge is particularly necessary because in the greatest buildings of the world these two sides of architecture are most inextricably combined, so that it is difficult to say just what is purely structural and what purely decorative.

Of course, the decorative material of architecture cannot be codified in any such simple manner as the structural material. It is far too wide in scope. Almost every conceivable form has at some time been used to decorate a building; geometry, the world's flora and fauna, man, woman, child, all the mythologies of the nations,

the heavens above and the earth beneath have been called upon to furnish decorative forms. The best that can be done, and even so there will be exceptions, is to make the broadest sort of classification, into two kinds, non-representational ornament and representational ornament.

By these names nothing as regards history and origin is implied. By non-representational ornament is meant simply that ornament, whatever its ultimate origin, which seems obviously not to seek to depict any one thing, or any group of things, in the world around. By representational ornament is meant that ornament which depicts, naturalistically or conventionally, some natural or recognizable object. Under the first head we shall include geometric ornament, and certain of those forms, which, though originally developed from representations, have come to have a form almost absolutely conventional and imaginary. So the egg and dart ornament, which though originally developed from the lotus, has come to have a well known form almost absolutely conventional, we shall class as non-representational ornament. On the other hand, all those myriad forms of classic and

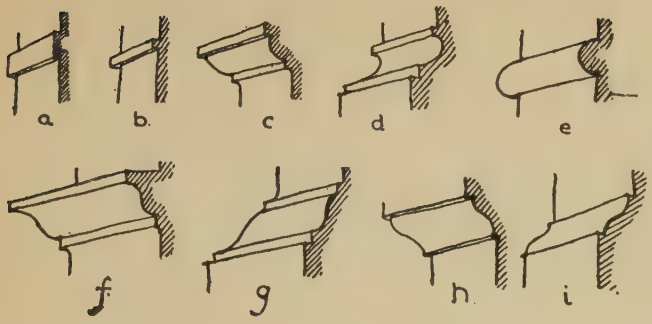
Gothic art which, though unrecognizable as depicting some one plant or animal, are yet obviously and unmistakably plants and animals, like the anthemion, the acanthus, the gryphon or the sphinx, we shall class as representational ornament.

The most important kind of non-representational ornament is at the same time the most important kind of ornament in architecture. This is the moulding. The word "moulding" is a broad term applied to any modulation of a surface, either projecting or receding, or both, such as would be described if a straight or curved profile—the section of the moulding—were drawn along a given line. In fact, many mouldings are made in precisely this way; a knife is cut with an edge formed to the profile of the desired moulding, and this knife, by means of a plane, or a hammer, is driven through the material, and what it leaves is the "moulding."

The origin of mouldings is lost in the past. As far back as we know they have been used to decorate buildings. Perhaps their origin was manifold, due in some places to one cause, in

others to something else. In Egypt, it has been suggested that mouldings were developed from the early method of building with reeds and clay; several reeds bound together into a cylinder, acting as a framework around the top and corners of a hut, forming a moulding themselves. In countries farther north, such as Lycia, or Greece, there seem evidences that mouldings were derived from wooden forms; from the projection of tree trunks used as beams in the frame of the wooden roof. Whatever their origin may have been, they were at once appropriated universally and developed and refined and modified continually, and used with ever increasing freedom, so that the sole distinction and the crowning beauty of many a building consists entirely in the mouldings, in their perfection of form and placing.

Mouldings, like any class of forms used again and again by mankind, have little by little come to be classified into different classes. Of course, the sections possible are infinite in number, but infinite as they are, there are in all certain easily recognized elements. These are briefly as follows:



MOULDINGS.

FIG. 11.

a. Fascia
b. Fillet
c. Ovolo
d. Scotia
e. Torus
f. Cyma Recta, as cap
g. Cyma Recta, as base
h. Cyma Reversa, as cap
i. Cyma Reversa, as base

The fascia—a flat band projecting or receding from the face of the wall.

The fillet—a flat band narrower than the fascia.

The ovolo—a quarter round, convex.

The scotia—a concave curve of the same general cylindrical type, usually elliptical in section.

The torus—a semi-cylindrical mould, convex.

The cavetto—a quarter round, concave.

Then, finally, perhaps the most important of all, the cyma reversa, a complex curve, convex above and concave below, and

The cyma recta—concave above and convex below.

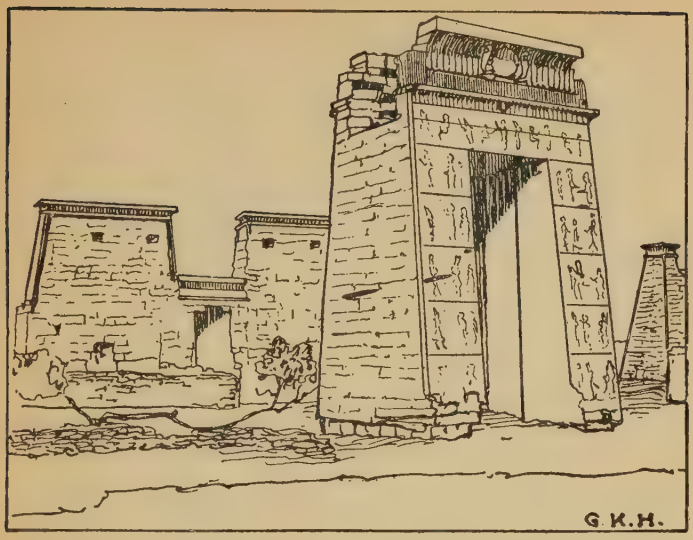
It is surprising how much of the effect of good architecture depends upon these few mouldings and their proper combination and placing. The reason for this lies in the fact that their effect on the eye is that of long bands of modulated light and shade; and architecture is in general an art that deals primarily with light and shade, and only secondarily with colour. It is not strange, therefore, that these long bands of light and shade and half-light, incisive as they are, determine to a large extent the final success or failure of a building, and its specific character.

Take, for instance, an Egyptian entrance.* Note how its cornice, that great sweeping cavetto, with its broad shadow and the light, narrow shade of the torus below, sets perfectly the note of the simple, massive dignity of the whole. Then, for contrast, look at a late Fifteenth Century Italian tomb, chiselled and carved with a delicacy like that of silverware, and note its

* See Fig. 12, page 145.

TOMB OF COUNT UGO, THE BADIA, NEAR FLORENCE, ITALY

This tomb by Mino da Fiesole illustrates the luxury of delicate ornament, and particularly of ornamented mouldings, which was a salient feature of the early Italian Renaissance. See page 144.



TEMPLE GATEWAY AT KARNAK, EGYPT.

FIG. 12. The simple, strong cornices are characteristic of all Egyptian work.

crowning cornice—a group of differing mouldings, topped with a delicate cyma recta—each moulding carved till it sparkles.*

Of all the categories of mouldings, the most important is that which is comprised within the classical tradition, for no nation before the Greeks developed mouldings beyond an elementary beginning, and all the nations after have,

* See the Plate opposite page 144.

directly or indirectly, drawn inspiration from the classic civilizations of Greece and Rome. It is also a tradition particularly important to us, because, of all moulding systems, the classic system is the simplest, the clearest, the easiest to understand and the most adaptable.

The reader will recall that mention has several times been made of the triple character of many architectural features. In classic mouldings, this tripartite characteristic appears again. In the cornice, for instance, which is in many cases the most important moulding group of a building, there are three main portions; a crowning moulding, called the cymatium, which is usually a cyma recta; below this, a flat band, the corona, which projects markedly from the wall, and casts a deep shadow down it, and finally, under this corona, and supporting it at its juncture with the wall, a moulding or a group of mouldings, called the bed mould. This is the typical classical cornice; and this system holds, whatever be the modifications of the details. The cymatium, the crown mould, is usually a cyma recta, because this moulding has the most delicate profile, and because the lights and shades and half-lights are so grace-

fully modulated on its ever-changing surface. The corona, its flat band catching the light, runs straight and strong around the whole building,

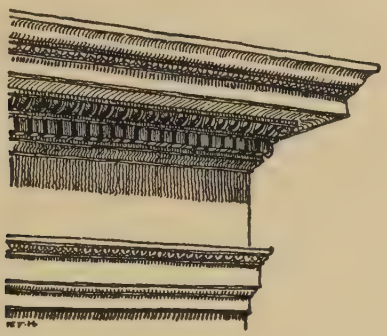


FIG. 13. A typical classic cornice.

binding it together like a snood. Below this, in its shadows, are the playing half-lights on the bed mould, that relieve the darkness, and give strength and support to the whole cornice, so that it may form, with its many bands of differing value, a crown to the building or feature it decorates.

In playing with this idea the classic designers devised many variations. They elaborated the bed mould, made it double or triple, or inserted a row of dentils, whose flat, narrow blocks and deep spaces between gave a pleasing

accented note. In Roman times modillions or scrolled brackets were added under the corona, and the Corinthian cornice was produced, a form that has the richest and most complex light and shade of any of the various classes of cornice. The Romans appreciated early, too, the value of contrast in moulding design; of alternating square and round, and convex and concave; the value, for instance, of a narrow, flat band or fillet between two curved mouldings; and in the possible combinations of these square or flat and receding or projecting curves they became so expert that at the present time it is hardly possible to invent a new beautiful combination; all we can do is to study and restudy, to refine and rerefine the elements left us by the past.

During the centuries, say, from 1200 to 1550, when Gothic architecture was the prevailing style in all the European countries, save Italy, new uses for mouldings gave a fresh impetus to moulding design. The earlier Romanesque methods of building had begun this development, particularly the use of the stepped arch.*

* A stepped arch is such a combination of concentric arch rings, one within and behind the other, that a section through them would be a series of steps.

It was the simplest thing in the world to round the corners of the successive projecting concentric arch rings, and once this was done the door was open to a thousand further complications and modifications. The whole development of Gothic mouldings is as intimately connected with the development of these arch forms and sections as that of the classic mouldings is with the development of the horizontal cornice.

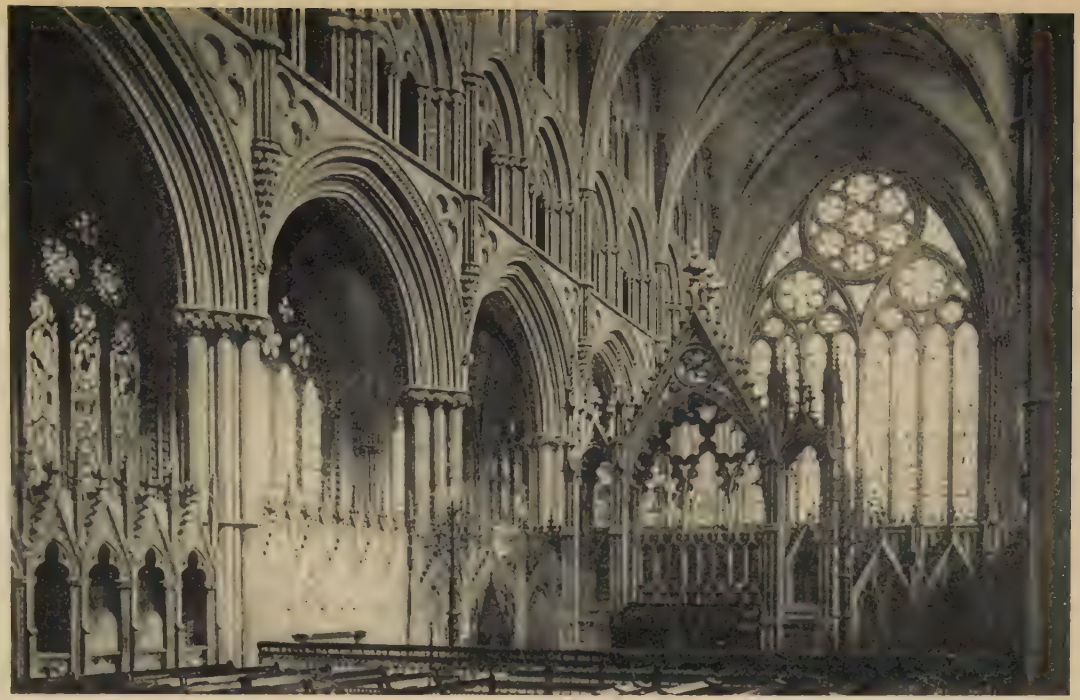
The Gothic moulding designer recognized no rules. Gothic moulding profiles are infinite in variety. In general, however, they may be easily differentiated from classic mouldings by the small use made of the fillet, or in fact, of any flat members at all, and secondly, by the use of deeply cut, receding members, that give very dark shadow lines. "Quirking," that is, the bringing of the top or bottom of a moulding strongly and suddenly out or in, to give emphasis, is the rule, rather than the exception. In addition, the Gothic architect liked to combine all sorts of mouldings, projecting and receding, into one band, much wider and more complex in light and shade than the classic architect would have permitted; indeed, no small part of that air of impressive and com-

plex mystery which is so characteristic of a Gothic church comes from precisely the complexity of surface of these elaborate mouldings, with their lack of flat surfaces.

This lack of fillets, and the resulting roundness and softness of effect, was sometimes carried to extremes. In English "decorated Gothic," which is the style of the choirs of Ely and Lincoln,* the arch moulds became mere series of almost meaningless curves, this one projecting and the next receding, and though there is a certain mysterious charm in the continuous changing light and shade of such a moulding, the trained eye feels the need of some flat surface on which to rest. Between the cornice of the Erectheum at Athens and the arches and piers of an English decorated Gothic church, there is the same difference as that between a dialogue of Plato and a mediæval romance.

During the Renaissance, classic mouldings inevitably came back into use, with the rest of the classic forms. But there was a difference. The eye of the architect had been too long trained in the freedom and subtleties of the Gothic moulds to be entirely satisfied with the Roman or the Greek forms; so it is in the mouldings of

* See the Plate opposite this page.



CATHEDRAL, LINCOLN, ENGLAND
(INTERIOR)

A perfect example of English "decorated" Gothic. Note the multiple vault ribs and the soft character of all the mouldings.
See pages 130, 150.

the Renaissance, particularly those of early date, in which lie the greatest differences between Renaissance work and the earlier buildings of the Greeks and Romans. Thus, in the tomb mentioned earlier, there are a hundred subtleties and peculiarities of moulding profile, for which it is impossible to find an exact precedent.

Gothic architecture struck off the shackles of the moulding designer; but it remained for the Renaissance to instill personality into mouldings; and personal they have remained ever since. All the most successful architects have been very careful with mouldings, and if one could look into the office of a great architect when a building is being detailed and see with what loving care every moulding is studied and restudied, again and again, by itself and in relation to its surroundings, by means of drawings and models, until exactly the right section is arrived at to give the proper band of light and shade; if one could see all this, he would realize more clearly why the good building—the Boston Public Library, for instance—is more pleasing than a bad one. He may realize that the apartment house next door is ugly; but he does

not realize that that crowning cyma is thrice too big and flaring and soft, stamped cheaply out of a cheap metal, or that mouldings around the door are big where they should be small, and small where they should be big. If he did realize this, it is certain that when he came to build for himself, he would see to it that he had his house designed, and designed well, by an architect, and not merely thrown together by an underpaid builder's draughtsman.

There are some mouldings which do not depend for their effect upon their profile alone, for their surface is itself broken up by intricate carving. From the earliest times the decorative instinct of man was never entirely satisfied with the plain curved surface of a moulding. Throughout the long course of Egyptian art the one important moulding, the great cavetto cornice, was painted in brilliant colours that varied the monotony of the long, simple shadow. The Greeks, even in very primitive times, seem to have painted almost all their mouldings, and as their skill grew, they came at last to carve the mouldings in patterns similar to those they had painted before. To them we owe the egg and dart, that most common of decorated mould-

ings; the water leaf, and the successful use of dentils—small rectangular blocks, placed close together, which give, with their alternating light faces and deep shadowed clefts, such life and variety to a cornice. To the decoration of their mouldings the Greeks applied the same subtlety, the same insight, the same delicate refinement of

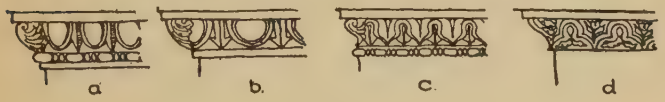


Fig. 14. The most common decorated mouldings:

a. Greek egg and dart
b. Roman egg and dart
c. Greek water leaf
d. Roman water leaf

taste, and the same beauty of workmanship that they applied to their sculpture, and, working as they did with such mental tools, they stumbled almost immediately upon the prime principle of moulding decoration. They discovered that the most beautiful decorated mouldings were those in which the very form of the decoration expresses and emphasizes the profile of the moulding.*

The egg and dart is one of the most univer-

* See also the Plate opposite page 170.

sally popular mouldings, because it illustrates this principle so absolutely. It is a form devised to decorate the ovolo, the convex quarter round; and the most cursory glance at it shows every accented line emphasizing this convex curve. The sides of the egg are of this shape, and they are emphasized strongly by a frame. The egg itself has a pleasing roundness that emphasizes the roundness of the moulding; and the straight darts between the eggs serve merely to accentuate the roundness on either side. It is this absolute correspondence between the shape of the moulding and the shape of its decoration, coupled with the exquisite rhythm of accented and unaccented, of wide and narrow, lights and darks which has made this egg and dart moulding so universally appreciated.

The water leaf is another example of similar correspondence. The water-leaf moulding is applied to a cyma reversa moulding; and every line in it is a line of double curvature that recalls the double curve of the profile.* Consequently, next to the egg and dart, the water-leaf moulding has been the most popular of all decorated mouldings; and at the time of the dawn of the Renaissance in Italy, it was these two

* See the Plate opposite page 170.

mouldings which took fastest hold of the imagination of the Fifteenth Century sculptors and architects, and tomb and altar piece and door and cornice were embellished with them.*

This principle of the correspondence of profile with decoration is not limited to the architecture of Greece, Rome and the Renaissance; it is universal, for to try to decorate an object which has a peculiar and accented surface, like a moulding, with a form which neglects and contradicts the shape of this surface is manifestly illogical. In Gothic architecture the principle is somewhat hidden by the Gothic artist's love for naturalistic representation, but in the best Gothic work one will find the shape of the moulding always carefully considered and subtly expressed in the design of its decoration. It is only a sign of decadence in the florid Gothic of Germany or Spain that the pure form of the moulding is forgotten, and naturalistic exuberance runs riot, forming mouldings into twigs and branches, hiding forced and uncouth forms under a gorgeous luxuriance of intricate carving.

The study of mouldings themselves is interesting and full of fascination. Their myriad

* See the Plate opposite page 144.

delicacies of form and the subtle play of light on their changing surfaces may be a continual delight. And it is not necessary to go far afield to begin the study. In one's own home there are undoubtedly many mouldings: door trims, picture frames, table tops, book-case cornices. Begin with these, running your thumb over them, follow their curves, watch them under differing lights. You will soon learn to notice slight differences, to find that some please, and some leave you cold, to see that some are coarse, and some delicate and refined. That is true appreciation.

It is, however, only when mouldings are studied with relation to their position that their importance and significance can be grasped. A moulding may be good in one place and bad in another, coarse in one position and refined in another. It will be worth while, therefore, to summarize briefly the principal uses of the moulding, and show what bearing they have upon its design.

Perhaps the most important of all is the use of the moulding, or a group of mouldings, as a cornice. We have already touched upon the importance of the cornice; and a walk among

any buildings whatsoever, will prove it if there are still doubts. If in the neighbourhood there is a house of that awful time in American architecture, known as the "jig-saw" period, notice in it the way the projecting cornice, with its multitudinous tiny mouldings, hangs out like a shelf, and how the stringy, inconsequential brackets below only emphasize its weakness and its ill-proportions. Then find some garish business building, or apartment house, just built on a narrow city lot. It has a great, much-decorated cornice, stamped out of sheet metal, sawn sharp off at the ends; the whole, cheap, awkward, glued willy nilly to the building, an obvious excrescence. These are examples of how a cornice may ruin a building; these are illustrations of a lack of imagination and an artistic insincerity all too common. For contrast, study the Riccardi Palace in Florence,* but there are, fortunately, examples almost as good in any American city, and their number is increasing. Whenever the cornice seems an integral part of the building, necessary and inevitable, either as a structural necessity to support the roof and take the gutter, or as an artistic necessity to crown and terminate fittingly an otherwise in-

* See the Plate opposite page 158.

complete wall; when, in addition, its proportion is good, and its mouldings well studied, so that the light and shade on it are interesting and varied, without being complex and restless, then the cornice is well designed.

It is hard to be more definite than this in the criticism of cornices; the possibilities are too varied. It seems true, however, that, in general, a cornice should have the lighter, more delicate moulding, like the cavetto and the cyma recta, at the top, and mouldings stronger and simpler, like the ovolo, and the cyma reversa below; and that usually it is a good thing to have at least one strongly marked flat face running through, to bind the whole together and give it accent. It is well, too, to keep in mind that the cornice has two separate functions, an artistic one, as the cap to the wall, and a structural one, as a finish to a roof, that is, as eaves. In criticising any cornice, both functions must be kept in mind, for if there is a strongly marked roof its relation to the wall will, to some extent, determine the cornice. The châteaux of the Loire valley, almost all dating from the time of Francis the First, owe a great deal of the

RICCARDI PALACE, FLORENCE, ITALY

A façade which is distinguished by great simplicity and a majestic crowning cornice. See page 157.

beauty of their cornices to this relation; the cornices are kept extremely flat because the roofs above are so steep, and interest is given by elaborate decoration of nearly flat surfaces, where bold projecting mouldings and a deep shadow would have cut the building in two, and destroyed the connection between walls and roof, instead of emphasizing it, as do these lovely flat cornices.

FIG. 15. Cornice from the wing of Francis I Château of Blois, France.

Mouldings are also very important at the base of a building, or a wall, inside or outside, to mitigate the harshness of the angle between wall and ground or wall and floor. Any build-

ing looks stronger if it has an adequate base. It follows from the very position of this feature that its mouldings must be strong in effect, not weak and indecisive. A weak base is almost worse than none. Often in brick-work the base consists merely of one or two small projections, unmoulded, sometimes further accented by a row of bricks on edge; a solution that is entirely satisfactory because so absolutely in harmony with the material. But in stone buildings there is a much greater flexibility of treatment, the only requirement being apparent strength and adequate size. The next common moulding for this use is the cyma recta upside down; for in this position it is as strong and sturdy as it is light and graceful in the cornice. There is something about the cyma reversa too abrupt for a base; it lacks just that touch of horizontality which makes the cyma recta so successful. In wooden buildings the structural problem is different, for the masonry foundation wall usually recedes from the face of the shingle or clapboards, instead of projecting, and in this case the wall covering is merely given a little curve out at the bottom, with a simple moulding below; and somehow this simple base, or water

table, always seems ample for the building above it.

Moreover, mouldings are often used as frames. This is, perhaps, their commonest use; door trim, window trim, panelling, are a few of the many places where they are so used. As a general rule mouldings used for frames must be more delicate and flatter than cornices or bases, for too large mouldings cast such a heavy shadow that they cut off the opening or panel with too great a distinctness. It is one of the chief faults of Victorian architecture, both in this country and in England, that all its trim mouldings are monstrously heavy, full of bold curves and deep cuts, piled one on another, till the frame becomes forbidding, rather than decorative. Equally unsatisfactory is that trim used so commonly at a later period, and still used, consisting of straight boards scratched with a few ineffective half-rounds down the centre and joined at the corners of the opening with square blocks on which are carved meaningless circles. Good trim is generally of three sorts; either flat, or with one main moulding of delicate section on the outside, and flat faces diminishing in width within, or so moulded as

to give one easy and delicate sweep from outside to inside. And no frame, no matter what its scheme or use, must ever be so large as to overbalance the space framed, or so heavy in projection as to appear to be an excrescence, and not a decoration of the surface on which it is placed.

The case of panel moulds is different. Here the moulding is often an integral and necessary part of the design, and its size and projections are, to a certain extent, already determined. Then, too, its size is usually so small that any complicated system like that of the trim is impossible. The same rule, however, that governs the design of trim governs panel moulds; and this, coupled with general delicacy and beauty of profile and shadow, forms the only criterion of good and bad design.

In masonry walls openings or niches are often framed with decorative systems of mouldings analogous to the trim. These systems are termed architraves; many of the most beautiful doorways of the world owe a large part of their beauty to architraves. And if flatness and apparent unity are necessary in interior door frames, how much more so are they in monu-

mental architraves! For there is a playfulness allowable in wood or plaster that in dignified stone would appear frivolous and out of place.

Some there may be who will object to this rule of frame design, and point triumphantly to a superb Gothic gateway as an example of a heavy series of mouldings used successfully as a frame, the doorway of Notre Dame, for instance. This objection is more apparent than real, for in good Gothic the mouldings never project far in front of the wall; they are cut on the thickness of the wall itself, revealing its depth and giving mystery and charm to the door within. In reality, these myriad mouldings are a frame only incidentally: primarily, and most important, they are an expression of the powerful arch that supports the great wall or gable above. Exactly the same is true of the intricate mouldings on the nave arch of a Gothic church; they are less a frame than an expression of the arch idea itself.* Notice how strong and virile are the lights and shadows and how the arch line is repeated over and over again in lines of light and dark.

The last main use of the moulding is its use as a "string course," that is, its use in horizon-

* See the Plates opposite pages 56 and 150.

tal bands across a building between base and cornice. The string course may be used to express floor levels, or it may be used merely decoratively to cut the building into pleasing vertical relationships. There is often one above the first or second floor, to make the bottom stories count as a base, and one near the top of the building to form with the cornice an adequate crown, while the shaft between is unbroken. String courses themselves are of comparatively little importance; it is by position that they gain their significance. In general, in small buildings they are to be avoided; and in large ones to be used with restraint. Of the design of the string course itself there is little to be said; a hundred different buildings may require a hundred different profiles, and their effect is their sole test. They ought never to conflict with the cornice, nor to seem to cut the building into too distinct parts; beyond that, the architect's only limitation is the proportion and the style of the rest of the building.

No attempt has been made in this chapter to give an absolutely complete list of the use of mouldings, nor to treat of them exhaustively. Such a treatment would be beyond the scope of

this work; it would demand a book in itself. The foregoing discussion is given merely as a suggestive outline, to point out certain salient features of moulding design, so that the reader may start out for himself to study mouldings, and thus lay the foundations for a clearer and truer personal appreciation.

There are, of course, other kinds of non-representational ornament, but there is not much that need be said of them. There is the whole field of geometric ornament, the use of squares, ellipses, checker-boards, frets, either in bands or over broad fields. There is just one kind of ornament to which reference must be made, because of its sincerity, its beauty, and its gradually growing use; and that is the kind of ornament produced by the combination of different materials; such as brick and tile, or brick of differing colours, or brick and stone. It is an old method, but for many years out of fashion. We find it on Tudor houses in England, in the form of lozenge-shaped patterns, produced by the insertion of dark and light bricks in certain places; the pattern usually charmingly irregular, wandering naïvely over a gable end, and then dying away, or changing abruptly where

the width of the brick work made it difficult to make the pattern come out straight. There is an especially good example of this treatment on the front of Hampton Court Palace, near London, and a modern example in the Duncan house, recently built in Newport, Rhode Island. Lately, the increasing careful study of the architecture of the past has showed us the possibilities latent in this sort of thing, and more and more, with greater freedom and skill, we are beginning to have buildings with the charming texture that a subtle pattern gives; and more and more, we are substituting for cheap and ugly metal cornices bands of gaily-coloured brick or tile, or terra cotta, to fulfill their æsthetic purpose in a saner and more sincere manner.

Of all kinds of ornament, however, it is the ornament of representation that has the strongest grip on human sensibilities, and that touches with the greatest poignancy the depths of artistic appreciation. Ever since our ancestors painted buffaloes and mammoths on their cave walls, or carved them on bones, humanity has delighted in pictures. Almost every child draws pictures of the things that appeal to him most:

engines, and boats, and horses, and houses, and people; and however deeply buried by later training and daily tasks, in most of us this picture-making instinct lives always. It is this picture-making instinct applied to architecture that produces representational ornament, and makes us warm to a beautifully carved flower frieze more readily than to a Greek fret.

From the earliest times, this picture-making instinct has been bound up inextricably with the religious instinct. The savage often endows his pictures with a magic life and a deep symbolism, and traces of this feeling linger yet. That is why Mr. Ruskin laid such stress upon representational ornament, looking at it with a religious earnestness. Ornament was to him more than decoration; it was a form of worship, almost sacramental. Its appeal to him was as much moral as æsthetic; and from this attitude of his he developed his queerly coloured views of architecture, and his queerly warped theories of ornament. All praise to him for the serious and reverent nature of his criticism! A great deal more of that spirit in our American design would give us better, freer, more beautiful buildings. And yet appreciation of Ruskin's

earnestness and sincerity must not blind us to the errors of his one-sided viewpoint; nor need we follow him in every detail, and we may rest assured that the lovely fall and the swaying curves of a piece of hung drapery are as properly decorative as the similar curves in a twining vine; the beauty of the ornament lies primarily in line, and balance, and light and shade, and not in subject.

But to deny that the subject has anything to do with the effect of ornament is as illogical as to go to the other extreme with Ruskin. The Egyptians felt an awe and a thrill at their painted lotus that is foreign to us; but the mediæval peasant's pleasure at seeing his native plants carved on his church door we might have, if we would. To tell the truth, the modern architect, under the present professional system, is so occupied with structural details, and the main questions of composition, that he cannot afford to study every bit of ornament from nature; he turns naturally to ornament of the past that he knows is beautiful, and the relevance of its subject to modern life is lost sight of. This is not a permanent condition; it is the inevitable result of the suddenness of our æs-

thetic growth, and the immense amount of work to be done in a short time. Already there are signs of a healthier attitude; already our architects are beginning to consider classic ornament more as a basis, and less as a set of forms to be slavishly followed. More and more on our best work touches of native flora, bands of oak leaves or the like are appearing, and only recently a firm of New York architects worked out with their modeller, for the Mary Baker G. Eddy memorial, near Boston, a set of forms classic in feeling, but based on the morning glory and the wild rose, that, as ornament, are nearly perfect. These friezes and panels have the delicacy and grace of ornament of the best Roman or Renaissance work, but in addition they are alive with the freshness of real creation, and instinct with an appeal which the pure classic would never have possessed. It is to be hoped that this example is but the beginning of a movement in American architecture towards a new appreciation of the opportunity that our native forms offer, and a new freedom in the treatment of the skill of the past.

Historic ornament has, nevertheless, a tremendously important place in the understand-

ing of our art at the present time, and an understanding of it is vitally necessary to the appreciation of architecture, not only because of its important relation to the work of this day, but also because of its inherent importance in the monuments of its own times. Of Egyptian, Babylonian, and Persian ornament little need be said, for, interesting as they are, and beautiful in their own place, their symbolism is so important that it is impossible to begin to understand them without at least some knowledge of the mythology on which they are based, and that it is beyond the scope of this book to give. Egyptian ornament is interesting from two sources; the use of decorative conventionalizations of the sacred lotus, and the use of colour as a decoration for architecture.

Forms, to the Egyptians, as to all primitive peoples, are fluid, susceptible of infinite change, provided certain formulæ are observed. Thus, the lotus was changed into a thousand forms, into capitals for columns, into ornaments for all kinds of furniture, into decorative spots, to be formed into rosettes or bands or all-over patterns. Thus the human figure was gradually conventionalized from the fine naturalism of the

A B

A: WATER LEAF, EGG AND DART, AND ANTHEMION FROM THE ERECTHEUM, ATHENS, GREECE
B: ROMAN ACANTHUS FRIEZE FROM THE LATERAN MUSEUM, ROME

Contrast the incisive and refined perfection of A with the varied relief and gracious naturalism of B.

earlier dynasties; and the size of the figures was determined, not by reality or the demands of perspective, but by the ideal importance of the figures represented. A king filled a whole temple front, while his slave was scarce two stones high. But these figures were always grouped in serried ranks and combined, big and little, with hieroglyphic inscriptions, into a whole that was beautiful, well composed, and carefully executed. The Egyptian, for all his symbolism, was always an artist; the magnificence of his buildings in their ruin bears eloquent witness to the fact that his symbolism and his æsthetic creativeness walked always hand in hand.

This decorative ability, this innate feeling for beauty, is equally evidenced by the colour decoration of the Egyptian buildings. We, who have lived always in the quiet, cloudy north, can never realize the absolute necessity for colour in the architecture of the sun-steeped south. The blaze of tropic day on stone or stucco demands colour to mitigate its dazzle, and colour the Egyptians gave it, blues and greens, browns and reds, and a very little yellow and white, for in the use of colour the Egyptian was as conventional as in his use of form. The colour,

whether outdoors or in, is always in flat masses, so that the solidity of the decorated surface is never lost. Therein lies the lesson to us; if we wish to produce that decorative greatness, that quietness, that solidity, that air of ever-living strength, there is but one way to do it, to make our ornament, whatever it is, pictorial or otherwise, primarily decorative; to keep it always an integral part of the surface to which it is applied.

But decoratively skilful as the Egyptians were, their ideas of composition and design were merely elemental. It was only with the Greeks that we see the beginning of a real grasp of the value of line. It is true, they built largely on Egyptian origins, but what with the Egyptians was a mere incident became for the Greeks the foundation of their system. This was the S curve, "the curve of beauty," as Hogarth called it. There is something about its continually changing curvature particularly fascinating, so that, once discovered and applied, it could never again be forgotten. And the Greeks used it to the full; and along with it discovered the value of gradually changing the curvature in every line they used. There is scarce a Greek

vase, or a Greek moulding, or a Greek ornament which has any circular curves in it at all; every curve is something subtly fascinating, starting nearly a straight line, becoming more and more curved throughout its length, ending with the sharpest curve of all. This wonderful mastery of curved lines was combined with a delicacy of feeling and a perfection of execution unparalleled to this day.*

It is also to the Greeks that we owe several forms that have been father to a tremendous tradition; the conventionalized acanthus leaf, the anthemion, and the combination of these forms with a branching scroll. The acanthus leaf especially, at first spiky and flat, later rounded and deeply cut, with its serrated edges, and strongly modelled surface, forms a motive admirably suited for almost any decorative purpose, as its long history proves.

Probably, however, it is for their skill in using the human figure decoratively that the Greeks were best known. A thousand people know the Parthenon frieze where one knows the anthemion. They were supreme in this field; no such flat conventionalizations as those the Egyptians used pleased these truth-seeking,

* See the Plate opposite page 170.

beauty-loving people; their figures must be real, they must be as perfect in truth and beauty as their carvers could make them. Now it is much more difficult to use naturalistic figures in a decorative way than it is to use flat and conventionalized figures, but the difficulty was not too great for the Greeks because they were always pressing on toward an ever-growing ideal. Almost all the early Oriental peoples were conservative, priest-ruled, superstitious, and their ornamental forms developed naturally into standardized sacred types, with which they were satisfied. A thousand years produced less change in the art of Egypt than a hundred in Greece or Rome, because in Egypt the priestly ideal had been attained at the start. In Greece, however, the ideal was never attained. As their philosophy was an eager, passionate, unceasing attempt to get at the facts of nature, an attempt that grew and broadened as the years passed, always searching, searching, and never attaining; so their art was a continual and eager development, ever pressing on to ideals never attained, because as the art developed, so did the ideal; always striving after new beauty, never satisfied, even in its decadence trying for new

forms of splendour never before achieved. Therein lies the secret of Greek greatness.

There was something of the same eager idealism, though of a more homely kind, in the Romans who followed the Greeks as the foremost people of the world. They realized the beauty of the Greek art; but if one is tempted to say it satisfied them, let him study a little some of the myriad fragments of Roman friezes that remain to us.* They are unsurpassed. To be sure, they use the acanthus—a Greek form, and, perhaps, the branching scroll, also a Greek form. But there is about them a splendour of light and shade, a forceful modelling, a saving naturalism, that is new. True, the Romans could never carve a Parthenon frieze or the Phidian fragments; but on buildings of the great scale the Romans loved, it was an impossibility to use figure sculpture; sixty feet of perfectly sculptured figures are wonderful; three hundred feet would be monotony. That the Romans had a different theory from that of the Greeks is no argument against it; and the ornament of the mediæval and modern world owes infinitely more to the Romans than to the Greeks. In particular, the Romans were the first people to

*See the Plate opposite page 170.

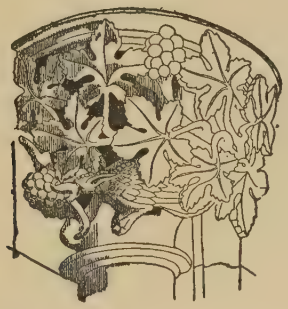
use natural foliage extensively as ornament, treated in a natural way; and the first people to appreciate the value of varied relief in carved ornament. The relief in all Roman ornament is in places high and bold, at other times almost dying into the background; and the resulting light and shade, though with less precision, perhaps, than Greek relief, has a life and variety which the Greek never knew.*

It is just at these two points that our modern ornament is lacking. We have learned line from the Greeks, and from the Romans, splendour and variety; but the Roman use of natural forms we pass by, and too often our ornament is flat and uninteresting in relief, as if stamped out of metal or sawn from wood, rather than modelled in clay or carved out of solid stone.

The Byzantine artists had still another decorative idea; their mouldings were flattened and often soft and coarse in profile and their relief is flat and hard. Nevertheless, Santa Sophia in Constantinople is gorgeous in decorative effect.† The Byzantine used his ornament to cover large surfaces with patterns of extreme intricacy, and for this purpose too interesting a re-

* Compare the Plates opposite page 170.
† See the Plate opposite page 110.

lief had to be avoided. Of Romanesque carving it is not necessary to speak, for all that is good in it is similar in spirit to either Roman or Byzantine models, or else was developed to a far higher level in the ornament of the Gothic period.



CAPITAL FROM SOUTHWELL MINSTER, ENGLAND.

FIG. 16. Note the naturalistic treatment of the foliage.

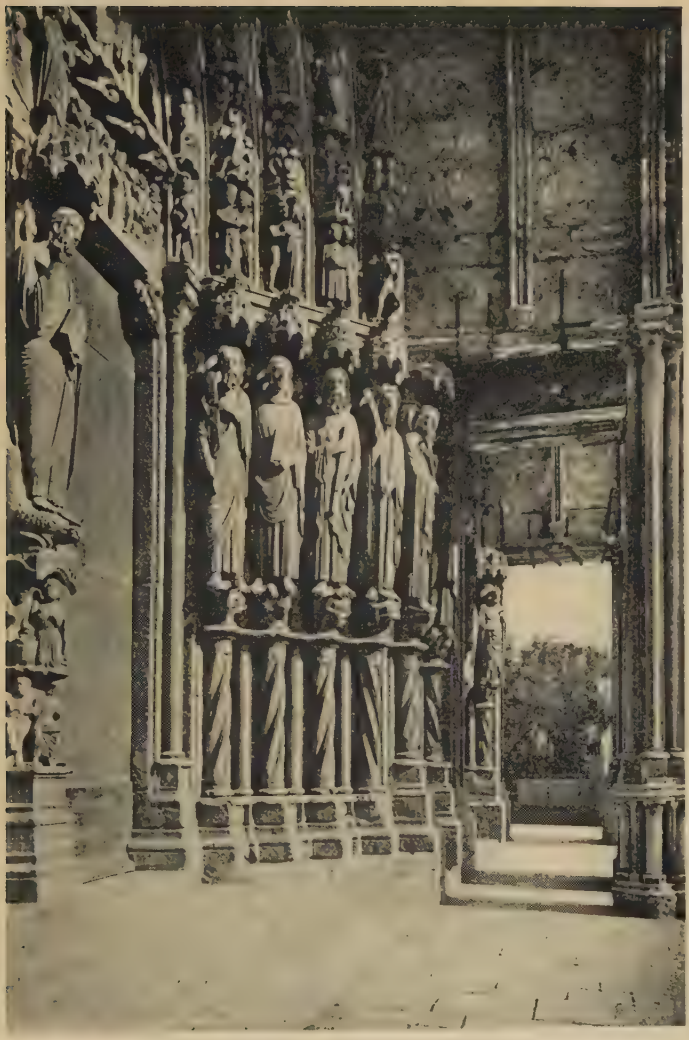
This Gothic ornament has already been treated at some length, and it will not, therefore, be necessary to add much more concerning it. Suffice it to say that in Gothic ornament we get the lovely flowering of the whole Gothic spirit; its delight in good craftsmanship, its slow growing but insistent individualism, its naïve sincerity, even its reverent mysticism. At times

it suffers from the lack of the classical grasp of line. This is particularly true of English Gothic; the capital illustrated has, for instance, a somewhat bulbous silhouette, and the wreathed effect contradicts absolutely the supporting function that the best capitals express. But however many flaws we may pick with details of line, no fault can be found with this capital as an interesting and sincere interpretation of the ever fascinating, ever delightful outside world.

French Gothic ornament is often as beautifully structural as the English is beautifully naturalistic. This is particularly true of figure sculpture, which is, perhaps, the most successful architectural sculpture in the world, next to the Greek. French Gothic decorative figures are always strong, upright, structural, and always, too, the best are beautiful by themselves, with well modelled heads and masterly drapery. Conventionalization in these figures never goes so far as to make them bad sculpture although good architecture; like all the best ornament, they are both good in themselves and in their place.*

The development of Renaissance ornament is

* See the Plate opposite this page.



CATHEDRAL, CHARTRES, FRANCE
(TRANSEPT PORCH)

Gothic architectural sculpture at its best. The figures are full of structural feeling, but beautiful in themselves as well. See page 178.

the story of the gradual struggle of classical ideas, the classical feeling for line and relief, to a new ascendancy. But the Gothic influence never completely died. Renaissance ornament, particularly in France and England, was never completely like the ornament of Greece and

French Gothic Capitals.

Fig. 17. Notice the strong structural vertical feeling and contrast with Figure 16.

Rome, because the Middle Ages had left an indelible influence upon men's minds. There is no classic prototype for the heavy garlands of very real fruit and flowers that the English architects of the Eighteenth Century loved so dearly. There is certainly no classic prototype for the "strap" ornament and the carved shields and curved cartouches so popular in

France at the same time. It was only in periods of frank artistic decadence that rigid copying was indulged in; the dreary period of the Roman and Greek revivals of the Eighteenth and early Nineteenth Centuries and the formal classicism of the Eighteenth Century in Italy. Then, too, the whole development of Renaissance art was influenced by the great individualism of the times, the new humanism. Particularly in Italy, each artist had his differing style; the history of the art is the history of successive men of genius; from the time when Brunelleschi reared the Pazzi Chapel, and Desiderio da Settignano and Mino da Fiesole put up their lovely tombs and altar pieces, to the time when Michelangelo, by the very force of his misunderstood tremendousness, ushered in all the good and bad of the Baroque, until all Italian art thundered in stucco splendour and plaster profundity to its wild and riotous decay.

Of post-Renaissance ornament, there are three or four influences it may be necessary to mention. First, there are the French "periods," known by the names of the reigning kings, Louis Quatorze, Quinze, Seize, and Empire, and the corresponding trends in the orna-

ment of other countries. In them, for the first time, the artist seems to consciously seek his ends in an abstract way, unrelated to the past. In them, for the first time, the artist seems self-conscious; and though there is a loss of naïve charm, there is also a corresponding gain in abstract skill.

There is system in these periods, too. They are illustrative of the continual conflict of two contrasting ideals, the restrained and "classic," and the free, unrestrained and often erratic "romantic." In the so-called Louis Quatorze and Louis Quinze styles, although exteriors are severely classic, the lighter, freer style had full sway in interior design, resulting in that combination of sweeping, graceful curves, and gilt and white and light colours that all of us know too well; but too often know only from out of place and misunderstood modern caricatures. Could we see a real interior of the style at its best, furnished in perfect tone, and peopled with the joyous costumes of the day, we should appreciate more its strength, its grace, its wonderful grasp of abstract line, the perfection of its curves. Later, there came the inevitable reaction to the restraint of Louis Seize,

and the Adam brothers, and then to the severity of the Empire—periods losing more and more the talent for ornament in itself and for itself. This tendency developed finally into the long and dreary monotony of the revivals, from which we have scarce yet emerged.

Even more important for us is the so-called "Art Nouveau," "Secession" art, or whatever you may call it. This is a development of the self-consciousness of the artist to the point of morbidity. The artist is so conscious of his aims, his theories, his ego, that he is scornful of the past; so proud of his own nationalism or his own superior culture, that he deems it more than sufficient to fill all the demands of art. Though he pretend to appreciate the art of the past, his own vanity, or his nationalistic afflatus forces him to neglect its opportunities for this modern age. Originality is his god, not beauty; and he must forget the language the past has furnished him to forge a new language all his own.

And yet, it must not be thought that there is no praise due the many thinking artists who are labouring in this new way, or the ideals of sincerity and true expression which they uphold.

To bring about any reform extremists are necessary: perhaps even the Reign of Terror was necessary to the future health of the French nation. So, in "Art Nouveau," we must see not a new style that is the artistic salvation of the world, but rather a protest against the slavish imitation of the past, a protest movement that will act and react with the innate conservatism of the human crowd, to produce at last an art renaissance that shall be truly as great as that of Athens, or of Rome, or of Florence, grateful and reverent towards the past, but keenly alive to the present, and with its mind ever dreaming of the future, using the past as a means to a beautiful present and a more glorious future.

CHAPTER VI

THE CRITICISM OF ORNAMENT

There has been so much discussion of ornament, and it is such an important part of the art of architecture, that it will be worth while to devote a little more time to it, and to try to get at the question of what is good and what is bad in any ornament, whatever the style or subject. Ornament can be judged in two ways; first as a thing in itself, and secondly, in relation to the building which it adorns.

Ornament as a thing by itself should be beautiful. This should be self-evident; for ornament is by its very interest the element of a building on which the eye dwells longest, and on which its attention becomes at last fixed. In a way, ornament is, therefore, a sort of climax. At a distance the whole of a building is seen as a mass, even a silhouette; as one approaches, interesting details begin to show themselves; doors, windows, columns; but when one is very close to a large building, even these may be over-

looked, and the eye dwells on the swelling curve of a base mould, or a beautiful bas-relief over a window, or the soft texture of varied brick. And it is an interesting fact that the larger the building the more this is true; the more the effect of the thing as a whole is lost on a close view, and, therefore, the more the eye seeks in what it can see for interesting ornament. This explains why it is that a small house can be beautiful with no ornament at all; whereas a large building equally barren of relief would be inexcusably dull.

Ornament, therefore, from its very function to beautify must be beautiful, and it must consequently follow all the demands of beauty which have been already enumerated, unity, balance, rhythm, climax, grace, harmony, and so forth. The criticism of ornament as an entity by itself consists, then, of the application to the ornament of these requirements. But that is not all. The demands enumerated in Chapter II are demands of pure form, and most ornament is more than this. Architecture is pure form based on good structural sense, and ornament is pure form based on a just and sincere spirit, for with ornament, and the idea of rep-

resentation, there has entered a new element. This element is the direct appeal of the representation to our emotions; that is, the emotional effect of that complex of emotions, sensations, memories, and associations, that the forceful representation of anything, beautiful or unbeautiful, produces in us.

Of course architecture, too, has a certain amount of this element; a Gothic church produces a very definite, direct emotional effect in us; so may a building in any of the styles. In a Doric column we see Athens, before a Corinthian colonnade we are in Rome, in a Louis XIV room there rises before us the picture of that gorgeous silk-clad court. But this is a delight more intellectual and more sentimental than the direct emotion at good ornament; it requires a mind well trained, keenly alert, stocked with such a store of the past as only education can give.

Ornament is more democratic; a good representation of their brother men strikes a chord and sets it thrilling in those to whom Athens is unknown, and Rome only a vague word. It follows, then, that the subject represented is important to the effect of good ornament, and

more important than most of our present-day architects realize. In the foregoing chapter there has already been discussed one aspect of this question, the matter of the material on which the designer may draw. But there are other aspects besides this on which it is necessary to make our minds clear, and it is these with which this chapter must deal. Chapter V was concerned with material; this chapter will deal with artistic theory.

Representational ornament, whatever the subject, must first of all be suitable. It must have a subject suitable to the material out of which it is made, suitable to the medium with which it is made, and suitable for its place on the building and to the building's purpose.

Ornament must have a subject suitable to its material. This is not such a strange fact as it may at first seem. Consider for a moment the qualities of the materials, granite and bronze. Granite is hard to cut, heavy, with a coarse and interesting texture. Bronze is metal poured molten into a mould which is formed from a model prepared probably in clay, soft, easily modelled, capable of the most delicate variations and modulations of surface. Bronze has,

in addition, a glossy, shiny surface when it is finished, that reflects a changing light from every slightest curve. Is it strange that what would be a fit subject for one material should be ridiculous in the other?

True, human figures could be carved in each, but not figures dressed alike or doing the same thing. The granite figure should be a tremendous Colossus, with simple angular features, and draperies falling in simple, severe lines. It should be posed strong and upright, or seated with enormous dignity and repose, with an age-long quality in the posture like the age-long character of the material. The bronze figure may be dressed in intricate folds, or be nude; it may dart hither and thither at the artist's fancy, it may be in a posture of swift motion, and yet there is something in the ductile quality of the material that seems perfectly appropriate.

Or consider the effect of different plants fashioned in different materials. For instance, the English loved to decorate their great iron gates with a conventionalized vine, with delicate, twisting lines, thin curling leaves, tiny tendrils, curving in spirals. Can this be imagined

in granite? The very grain of the stone would be coarser than the tendrils; in the play of light over its granular, multi-coloured surface the delicate shadows would be lost, and the whole seem weak and pointless. A branch of white oak, on the other hand, with its strong leaves, and its hard, round acorns, could be carved in granite more effectively than cast or wrought in metal.

It is a universal rule, in fact, that the harder and more durable the material of the ornament, the severer and more dignified must be the object represented. And, in general, the order from the hardest and most durable to the softest and most cheerful seems to run in some such fashion as this: First, granite, suitable for severe, somewhat conventionalized figures, and plants with hard, strongly marked lines; next, marble, though here there is a tremendous variety of textures and surfaces, suitable to a great number of differing subjects. It must, however, be noted that any marble with strongly marked colour and veining is even less fitted for delicate ornament than granite. Next, limestone, the ordinary white stone of our American buildings. This is, like marble, a very va-

riable material, and is midway in the scale, so that almost any well designed ornament seems suitable. Next, Caen stone, very soft and easily cut, suitable, therefore, for all sorts of naturalistic ornament. Then wood, again a rich and varied material, especially suitable for subjects in low relief, but also, if the subject is naturalistic, for high relief. And last, the metals, in which a freedom of line and subject, a riotous play of fancy, are permitted such as no other material allows.

Of course, this list is approximate only; but it is significant, and it is based on truth. And there are so many cases in our modern work where the different qualities of different materials is forgotten, that it seems necessary to include it. We are always tempted to try to do two things at once; love for rich materials and rich ornament often leads us to forget the simple demands of good design. Let the reader take this to heart, and look at the ornament around him with this in mind; and the sense of the necessary fitness of ornament and material in good architecture will soon make itself felt.

Ornament must be suitable to the medium in which it is executed. This is a simpler and

more obvious truth than the foregoing; it needs little explanation. It is absurd that painted ornament, with all the richness of colour as its field, should have the same kind of subjects as carved ornament; though this has been done times enough. The artists of the Baroque period were particularly to blame; they revelled in monotonous paintings of carved garlands and reliefs, and in sculpture full of strained and picturesque motion, and the result, no matter how skilfully done, is almost always unsatisfactory. We are less sinners than they, but we must always be on our guard.

Last of all, the subject of ornament must be appropriate to the purposes of the building which it decorates. And here again we are lacking. There seems a spiritual blindness about us, to carve exactly the same things on our churches as we do on our theatres. Think of the added life and zest our architecture would have if always the modeller and architect had fixed ineradicably in their minds the purpose of the building whose ornament they were designing. It may be right to carve or paint plant forms almost anywhere; the world of green nature seems always at home; but the moment

the human element enters in, then we must be careful; and this human element ought to enter in a great deal more than it does. Surely we are missing something in our architecture when we decorate the frieze of villa, courthouse, theatre, and church with the skulls and sacrificial ribbons of the Roman temple. If we could only more use architecturally the figures our sculptors are doing so well! There is a continually growing excellence in our American sculpture, but the architects—and their clients, too, for it is their wishes that the architects must materialize—seem lagging in their appreciation of the value of this sculpture and these sculptors to them.

In Arcadia, in that perfect society where architect, painter and sculptor collaborate in every building, things will be vastly different. All the theatres there, not merely one or two, will be decorated with reliefs and unusual paintings typifying, perhaps, the great plays of the world's literature, perhaps merely the exuberance of the youth-giving joy that produced them. All the churches will have written large upon them in frieze and group and picture the glory of the saints and martyrs and prophets and

apostles of all the ages, and the constant struggle between the forces of light and happiness and the forces of greed and decadence. And the schools—in England they are making more of a beginning at school decoration than we; a glimpse into one of their new schools with its class rooms decorated with soft mural paintings is a revelation. But in Arcadia even that beginning will seem crude; the school fronts will be gay with friezes of happy children, like those glad children that sing everlastingly from the famous Cantoria of Luca della Robbia.* The corridors will be bright with paintings of all those trades and professions to which the pupils aspire; and in the assembly hall there will be a great glorification of Life. Even the houses in Arcadia will reveal something of the character of their owner from the decorative subjects which he suggests that his architect embody in the design.

Let us hope that this unrealizable Arcadian ideal will be striven after here and now. It is not so impracticable as it seems; one of the great New York High Schools is being little by little decorated by a number of artists in some such similar way. Our ancestors have seen and

* See the Plate opposite page 194.

appreciated the value of living, relevant ornament, and produced it; there is no inability in us; our sculptors have the skill, our architects are awaiting the chance. There is only one thing lacking—the desire; for one must remember that what the mass of people want, that they get. It is only because the person who is building does not know what he wants that the architect is usually compelled to exert such complete sway over the building. Let us hope, then, that the day may come when the great mass of people will come to appreciate the value of this live, human ornament, and demand it; for then our American architecture will blossom into new beauty, and our common life contain a new element of richness and joy.

It is even more important that the treatment of the ornament be entirely suitable to its material, medium, and purpose, than that the subject be suitable. For treatment, that is, the handling of the subject, is a technical matter; it is entirely dependent upon the material and medium, and yet it can make or mar ornament. It is, however, less interesting than the subject of ornament, for while the subject deals with the spirit and the soul, treatment deals merely

CANTORIA, FORMERLY IN THE CATHEDRAL, FLORENCE, ITALY

The sculptured human figures in Luca della Robbia, give to the whole a live and interesting quality which could never have been obtained by the use of conventional or even plant forms. See page 193.

with the externalizing of that soul. It is, therefore, in this matter of treatment that we must most diligently study the past; it is for this reason that in the historical summary in the last chapter the treatment was in every case emphasized to such an extent.

The most salient fault of the treatment of the ornament of present-day America is a fault that is not confined to our incompetent architects; it is universal. Indeed, it is often in the work of the lesser known men, even in some of our purely commercial architecture, that one sees the signs of a recognition of this fault, and an attempt towards something better. This fault is the treatment of ornament in terra cotta.

It is a great misfortune that terra cotta can be manufactured in so close an imitation of stone. It has warped our whole attitude towards it, and bred in too many of us an insidious artistic insincerity. All over the country terra cotta is being used to simulate the more valuable material; and every attempt is made by even our best architects to make this simulation as exact as possible, in colour and in texture. Ornament in terra cotta so considered is treated absolutely like cut stone ornament. In-

deed, a building faced with this sort of terra cotta seems a deliberate attempt to hoax the public into believing that it is faced entirely with cut stone.

We cannot but condemn this practice. Is it a sign of some innate insincerity in our minds that we have done it so much? Not altogether, it is to be hoped; it is rather a sign that our architects have thought so long in terms of cut stone, under present conditions the costliest and most durable building material there is, that it is hard for them to think in terms of another material less durable and less costly. And yet terra cotta has enormous possibilities of its own. Here are a few of the qualities that terra cotta possesses which are unique: First, it is not carved, but cast in moulds from models; so that from one model there can be made a very large number of terra cotta blocks. This at once suggests repeated ornament of some complex kind; some fine delicate pattern over each block that will give to the building a distinct texture, and differentiate it from a stone building. Second, since terra cotta ornament is not carved, but moulded and cast, it becomes possible to treat this ornament in a much freer way than would

be possible in stone. We can vary the relief endlessly, using deep holes of shadow and bold projecting masses of high light, or making the ornament so delicate as to almost disappear, with a cheerful forgetfulness of the more stringent demands of stone work. And thirdly, as terra cotta has to be baked, it can be glazed and coloured at little extra cost. What this fact may mean to us fifty years from now it would be idle to guess; the only surprise is that it has meant so little to us up to the present time. This is the more surprising since in the Italian Renaissance, which all of our architects study so carefully, there was a virile school of decorators in coloured terra cotta. Luca della Robbia, Andrea della Robbia; these are magic names in the history of the early flowering of the Renaissance in the north of Italy, names of men whose fame and wares travelled to France and far England; yet for all one can see of the effect of their lives and works in the buildings around, they might never have lived. Here and there, it is true, an architect has the temerity to use bits of coloured terra cotta on a building, here and there is a faïence wainscot or fountain; but the endless possibilities that lie in a free, sincere treatment

of ornament in coloured or glazed terra cotta have been strangely neglected. Let us hope this neglect will soon come to an end; that colour and terra cotta will eventually gain together their true place in our modern American architecture, and the day of imitation stones, from the cast-iron of 1856 to the cast terra cotta of 1916, will sink to an unregretted end.

There is one great class of ornament that it is needful to mention in any discussion of the criticism of ornament, because probably more has been written with regard to its merits and demerits than with regard to those of any other class. This class consists in the ornament that is formed by the use of elements originally structural necessities for a purely decorative purpose. Myriad examples will occur to one immediately; columns, niches, gables, domes—like the exterior shells of the Renaissance domes, such as St. Paul's in London—arches, and the like. The column and the forms closely related to it, the pilaster and engaged column are, perhaps, the most obvious. Originally, the column was a purely structural member, used as a support, where a support was necessary. Later, columns and colonnades were used merely deco-

ratively, because there is nothing that can take the place of the restful rhythm and strong grace of the colonnade. Of course, in some places the colonnade has a true function as a real porch; as in the Capitol at Washington, which has been so often cited before. But even in this case there is more colonnade than the actual demands would require; the decorative reason for the colonnade is really more important than the structural reason. And when we get examples of a colonnade like that of the Louvre or the State Education Building in Albany, the porch idea is practically non-existent, and the colonnade is frankly decorative; and it is as decoration wholly that it must be judged.

The Romans began another decorative use of the column. They used engaged columns, that is, columns partly built into a wall, in conjunction with arches. This combination is seen especially in their theatres and amphitheatres like the Colosseum,* but it was used on other buildings as well; on the Basilicas, for instance, and the Tabularium, the Roman governmental building, which rose high above the Forum on the Capitoline Hill. This combination of arch and column or pilaster was extensively used all

* See the Plate opposite page 22.

through the Renaissance period; naves of churches, palace fronts, cloisters, all were treated with it from time to time; the interior of St. Peter's* is a great example, as is the Vendramini Palace.† During the Renaissance the Italians began to use columns and pilasters —"orders" as they are called, in still another way, closely allied; that is, they decorated a plain, unbroken wall with engaged columns or pilasters, one, two, or three stories high.

There has been a world of abuse flung at this decorative use of the "orders." Critic after critic has assailed it as non-structural, insincere; critic after critic has pointed out that these applied "orders" contradict the whole feeling of the wall and has claimed that they are a base practice of a decadent and hypocritical civilization which has poisoned our architectural taste, and directed us away from the true virtues exemplified in the glorious Gothic.

This charge, so often repeated, has been as a rule defied consistently by the architects, who continue to use these criticised methods of decoration with great frequency. It seems necessary, therefore, to look somewhat closely into

* See Frontispiece.
† See the Plate opposite page 46.

the merits of this criticism, and see what are the real facts of the controversy.

The difference seems to lie in the point of view. If we are willing to accept the point of view of these critics, we arrive inevitably at their conclusions; similarly, if we accept the architect's point of view, we shall continue to use these "insincere" decorations. The crux of the matter seems to be that the critics, who have so denounced this decorative use of structural members, have too much intellectualized the art of architecture. They have deified the virtue of sincerity, and applied it with a strictness entirely unwarranted. It is true that columns are in essence supporting members; and that to use them as decorations is to forget this original function. But, on the other hand, the column is a very beautiful object in itself, aside from its function as a support. Its strong, vertical lines, with its decorated cap and base are an architectural note that is unique, that can be obtained in no other way. Why, then, if the purpose of architecture is to create beautiful buildings, should the architect not use this uniquely beautiful motive, solely because of its beauty?

Let us look for a moment at one of the most criticised uses of the orders; their combination with the arch, as in the Colosseum. The beautiful rhythm of this building has already been analyzed;* and nothing that critics can say can destroy that. The critics' condemnation is a theory; the wonderful, stately rhythm of the building is a reality. Moreover, although the arches really do the supporting of the wall, and although the columns are a mere decoration, notice how the vertical lines of the columns express support, how they seem to make still stronger the strength of the arcaded wall. Similarly, the deep shadowed entablatures over the columns express the story heights, and tie the whole enormous circuit of columns and arches together. Now architecture is an art that appeals to the sight first and foremost; and it is, therefore, the things one sees, and their expressions, that are in fact more æsthetically real than the actual construction of the building. Therefore, it seems logical to conclude that whatever has an expression proper to its position is good architecture, provided it is beautiful; and consequently, the columns and entablatures of the Colosseum are good architecture,

* See page 56.

POST-OFFICE, EIGHTH AVENUE AND THIRTY-THIRD ST., NEW YORK CITY

This, one of the finest colonnades in America, illustrates the second scheme of symmetrical composition; a continuous motive stopped by end motives. See pages 42, 203.

because in effect and expression they merely accentuate the actual supporting of the piers, and the actual division into stories.

A somewhat similar method must be employed in judging the use of colonnades. One must use common sense; and where common sense tells one that the colonnade is not an actual contradiction of or detriment to the needs of the building, and his æsthetic sense tells him it is pleasing as well, he may accept it as good architecture. The colonnade of the Louvre in Paris is such an example. The majestic ranks of coupled columns set on the strong basement, and broken just sufficiently by the corner pavillions and the central pediment, are manifestly pleasing; strong and graceful, this colonnade forms a fitting ornament to the square on which it faces. Nor does it offend structurally, for although it is not a necessary porch, and although it has little actual relation to the building behind, the spacing of the windows gives it an apparent relation, and the building itself is not of a character to demand any marked structural expression. Equally satisfactory is the colonnade of the New York Post Office, already illustrated.* But colonnades can become actually

* See the Plate opposite page 202.

detrimental. The New York State Education Building in Albany has probably the largest permanent colonnade in this country; it is also one of the greatest architectural monsters of the last few years. In the first place, situated as it is on a comparatively narrow avenue with a steep slope, there is no such opportunity for getting the effect as a whole as there is in the case of the Louvre colonnade, and, therefore, no such reason for sacrificing the structure of the building to decorative effect. And the building itself, a great office and administration building, would seem to demand a treatment expressive of its official and educational purpose; a purpose that would apparently indicate many windows, and floods of light and air, and in addition a monumental and inviting entrance to typify the democracy of the state. In the building as it exists the strong projection of the colonnade throws a deep shadow over the wall behind, and the main entrance is marked only by an insignificant flight of steps, so that windows and entrance alike are lost in the dark; every possible expression of the building's purpose concealed; and the one thing prominent is a regiment of enormous columns, close to the ground at one

end, and at the other mounted on a high basement, because of the slope of the ground. Here the sacrifice of structural expression has been, indeed, too great, and in the colonnade itself, with its over-ornamented, crowded Corinthianesque capitals, and the heavy, box-like entablatures above, there is no supreme touch of beauty or dignity to compensate. Here, then, ornamental use of structural features has gone too far; here is a building where love of grandeur and exterior effect have led to an insincerity manifestly mistaken.

From this discussion, it would, therefore, appear that in the criticism of the decorative use of structural architectural members there can be both good and bad. We must neither entirely condemn nor entirely commend; each example must be judged on its own merits. Pierced Gothic gables over pointed arches, with no roof behind, colonnades, engaged columns or pilasters, are not of themselves either right or wrong. If there is no absolute structural contradiction entailed by their use, if they are not an absolute obstacle to the proper use of the building, one may excuse them, and, if they are beautiful, and fulfill a true æsthetic function,

accept them as good architecture. If, on the other hand, their use seems to actually veil and contradict the purpose of the building, or to fulfill no imperative artistic demand, then one is at liberty to condemn them bitterly for their patent insincerity, as an architectural blunder.

In these few pages devoted to the decorative use of structural members, the reader has already been brought face to face with another great fact in the criticism of ornament, which must be elaborated further, the relation of ornament to the building it decorates. In some ways this relation is a more important fact in the valuation of ornament than the criticism of ornament by itself and for itself; for many a great building has some ornament that is far from perfect, and even the loveliest ornament cannot redeem a building if this ornament is badly placed, or manifestly unsuitable. That side of the relation that might be termed intellectual or even spiritual, the matter of suitability of ornament to the purpose of a building, for instance, as regards both subject and treatment, has already been discussed at some length; but the other great side of this relationship, that is, the purely decorative side, needs some further

study. In other words, we must determine what are the relationships between a building and its ornament that produce good architecture.

The most obvious relationship between building and ornament is probably that of quantity. As one walks through any city, that difference between buildings may be the first to strike him. He will notice that while some buildings have a great deal of ornament, others have very little; and he will, at first, see no relationship between the amount of ornament and the merit of the building. Some buildings almost covered with ornament may be good, and some with an equal amount bad; some of the plain, unornamented buildings may seem bald and uninteresting, and some may be instinct with sturdy beauty.

Indeed, there is a great latitude in the amount of ornament that is good on a building. There is no general rule for determining this amount any more than there is a general rule for determining the proper number of adjectives in a novel. Ornament is one of the most individual and personal things about a building, and in it all the personality of its designer should enter, freely. There are some men born with Baro-

que minds, and some born with the artistic restraint of the Puritan. It does not behoove anyone to call names; to claim the baseness of the one nature or the perfection of the other; there is beauty alike in abandon and in restraint.

Nor does there seem any inevitable connection between the amount of ornament and the purpose of the building. At first thought it might appear that a theatre should be more ornamented than a church, that in general the gayer and lighter the purpose of a building, the greater the amount of ornament that might be permitted. But even this simple statement will not bear close analysis or universal application, for the character of a building is determined by the general scheme of its composition, and the kind, not the amount, of its decoration. Some architects are such masters of the subtle emotional values of pure shape and form, that the amount of ornament becomes a secondary matter; one architect can make a gay theatre front of one great arch and one frieze of terra cotta, and the next can make a solemn and impressive church in the style of the most florid Spanish baroque. In the amount of ornament suitable to a building there is no one rule, and in

DOOR OF THE ESCUELAS MENORES, SALAMANCA, SPAIN

This beautiful doorway is all the more effective for being placed in an unornamented stone wall. Note how the decoration fills the entire height of the wall. See pages 97, 212.

the criticism of the amount there is only one criterion and that of the vaguest; the amount should seem neither too great nor too small. Particularly, the ornament must not seem too great; better every time the under-ornamented than the over-ornamented building. Restraint is as valuable in ornament as in any other field of endeavour, and in any building that gives the impression that the designer has put into it every scrap of ornament his brain could conceive, there is, inevitably, a quality of ostentation and vulgarity. Dignity lies always in quietness, and quietness in restraint.

This must always be kept in mind in judging the amount of ornament on a building. Some of our architects seem to think that by the intricate play of light and shade over surfaces ornamented with too much luxury they will blind the eyes to the poverty of imagination behind the whole design. They do not realize that the difficulty of designing good ornament increases directly with the amount, and that the only way to keep a much-ornamented building from vulgarity and ostentation is by the most careful consideration of the ornament itself, with regard to its absolute fitness and absolute unity.

If the amount, the quantity, of ornament is, therefore, comparatively unimportant in judging architecture, the placing of ornament becomes just so much more important. One reason over-ornamented buildings are likely to be ineffective is because the great amount of the ornament prevents its being placed in some one spot to give accent and interest. Upon the placing of ornament depends a great deal of its merit or failure.

Ornament should, first of all, be placed where the composition of the masses of the building demands it. The value and necessity of this use of ornament in the consideration of balance has been pointed out.* Ornament may be equally necessary to give rhythm, or harmony, or climax. This is the reason buildings designed by decorators are often singularly unimpressive; the decorator, used to dealing in small things, enthusiastic in his use of ornament, has had no such training as the architect in grasping the composition of large masses, and lacking this grasp, he misplaces his ornament. The true architect, as soon as the general scheme of his building is determined, will realize at a glance where the composition calls for ornament,

* See page 55.

whether as a cresting for the roof, or on the cornice, or around a porch or door or bay window; and the ornament placed where it is in perfect composition gains value both by itself and for the building.

In large buildings the placing of the ornament becomes all the more important. In lávish buildings built at great cost, in which it is desirable to emphasize the note of dignified magnificence, the ornament may be diffused pretty generally through and over the whole building, provided always that it is never so placed as to apparently weaken the structure, or diminish the sense of strong power. But in buildings less formal, and buildings in the design of which the element of economy inevitably enters to a great degree—by far the largest class of buildings that surround us—ornament becomes a luxury and must be used, therefore, with all the greater care and restraint in order to produce the desired effect of richness and beauty with the least possible expenditure. This can only be done by concentrating the ornament in a few places, and in particular in placing it around the main entrance door and around the cornice or the roof. This method of

design by concentration was carried to the greatest lengths in Spain, where we find again and again great stretches of simple wall, capped either with a bold, painted wooden cornice or an open loggia, and decorated with one great crust of intricate detail mounting around and above the door.*

This is a style of design that is growing into continually greater favour. The best of the Colonial houses were fine examples of it; in them the general scheme was a simple, undecorated wall of brick or stone, with a delicate cornice to crown it, and a beautifully detailed door in the middle.† The ornament is absolutely concentrated, and the simple wall throws the door into a delightful prominence.

This tradition of concentrated ornament, never entirely dead among us, has been strengthened during the last few years not only by study of the Spanish and Mohammedan buildings designed in this way, but also because of reasons of economy; a teacher we have been all too slow to heed, for in this case it teaches a sane, artistic truth. The fact is that a building whose ornament is concentrated at one or

* See the Plate opposite page 208.
† See the Plate opposite this page.

DOOR OF THE GARDNER-WHITE-PINGREE HOUSE, SALEM, MASS.

The fact that the doorway is the only decorated feature of this house-front adds immensely to its charm. See page 212.

two or a few places is more effective than a building in which the same amount of ornament is scattered over the whole structure.

The kind of ornament that a building demands has already been considered and its necessary suitability for the purpose of the building and to the material in which it is executed. It only remains, then, to speak of the size of the ornament. The size of ornament is important, because it is this that plays a large part in one's unconscious realization of a building's length or height. In the architect's phrase, the size of the ornament helps to give "scale" to the building.

The great front of St. Peter's at Rome is a monumental example of false scale set by the size of the ornamented parts.* In the first place, it is decorated by a range of perfectly gigantic pilasters and engaged columns, each as high as a building itself. This order is capped by a correspondingly enormous entablature, on top of which is a balustrade at least seven feet high. All the windows and niches of the front are of correspondingly gargantuan proportions, and the statues are colossal. Now a balustrade is normally used as a railing, and

* See the Plate opposite page 216.

as such its height is rarely over four and a half feet, and the eye is used to windows and niches of a moderate size, and statues used as these are used only slightly larger than life. What the result of the enlargement of all these forms on the front of St. Peter's is can be seen at once; they dwarf it tremendously, and its enormous size shrinks to apparently modest dimensions. One cannot believe the balustrade is larger than the usual balustrade, that the statues are over twenty feet high, and consequently he can have no conception of the true size of the great building in front of him. The first view of the front of St. Peter's is almost always a disappointment, and it is a great shock to see a crowd pour out of the doors; people look like ants, not men. It is a shock, too, to see a little bell high up on the front, a bell apparently the size of a locomotive bell, begin to swing, and to hear proceeding from it tones deep and low, like the tones of "Big Ben." It is only after repeated visits that the true size and greatness of the building begin to dawn slowly on one. An equally forceful example of false scale is the front of the Grand Central Station, in New York City; the great stone group on the top, with its thirty-foot

figures, destroys at once the effect of size that the building should have had. Both are examples of the scheme of composition and the scheme of decoration of a comparatively small building used for a large building by simply increasing every part proportionately; a scheme that is necessarily imperfect, and leads to false judgments.

The first rule of the size of ornament, is, then, that ornament on any building should be so proportioned as to make the building appear its true size. This is to be done by keeping architectural forms such as balustrades, etc., as nearly as possible to those sizes which are normal and usual, and by never unduly changing the size of representational ornament from the true size of the object represented.

There is a second rule which governs the size of ornament which sometimes modifies the strict application of the first rule. This can be stated somewhat in these words: the size of ornament should be consistent with its distance from the eye. That is, ornament near the level of the eye ought to be smaller and more delicate than ornament far above it. This is a rule equally forgotten in St. Peter's, for all the front has

ornament of a similar size and one walks into the same gigantic type of mouldings that are used a hundred feet in the air.

Nor are we guiltless in this respect, here in America. Too often the upper part of otherwise beautiful buildings is covered with a maze of intricate ornament whose effect is totally lost from the street. The use of terra cotta leads us often astray, for terra cotta is cast from moulds, and for the sake of economy the temptation is strong to use the same moulds for similar details at both top and bottom, with the result that the scale of the ornament is bound to be lost in one place or the other.

Of course, both these rules have their exceptions; they are frequently violated in the best buildings. But if they are violated there must be a strong enough resultant gain to counteract the lack of scale that results. For instance, there may be a good and sufficient reason why the architect may wish to consciously falsify the scale of a building to make it appear larger, or smaller, than it really is. The architect of the front of St. Peter's may have been striving for just that result in order to produce the shock at the final realization of its true size

SAINT PETER'S, ROME, ITALY
(EXTERIOR)

An illustration both of the beauty of a well-designed dome and the false effect of small size given by the false scale of the decorative details. See pages 89, 213.

mentioned before. Similarly, it may be desirable to make a small building appear large, to give it commanding position; or to make it compose better with its neighbours. Still, the conscious and voluntary falsification of scale is always a dangerous thing, and the gains it produces often visionary; there is about it an insincerity that persists in giving continuous offence to a trained eye after the trickery has once been perceived.

There is a great freedom permitted in the use of natural forms in interior design that seems to contradict this rule. For instance, there are the reliefs on the outside of the choir screen of Notre Dame in Paris, charming compositions with figures about three or four feet high that make a wonderfully decorative band around the aisles that encircle the choir. They do not offend the sense of scale, either, for, although they are very much under life size, they are just on the level of the eye, carefully worked out in every detail, and frankly miniatures. That is the secret of using naturalistic ornament at a size smaller than the reality, it must be frankly a miniature, there must be no pretense about it, for pretense is insincere, and insincerity is bad

art. That is, perhaps, the reason that near the eye things smaller than reality are so much more successful, as a rule, than those larger than reality; for it is easier to make a miniature than an enlargement. There are some cupids holding a holy water vessel at the entrance of St. Peter's which are good examples of this; they are close to the eye, and carved cleverly with a masterly truth to the child form.* Yet in size they resemble everything else in that church. They are gigantic, seven feet high, perhaps, and somehow their size seems an insult, and fills one with a sort of unconscious stubborn anger, a desire to shout, "No, I'm not as small as you make me out to be, you overgrown and Rabelaisian infant"—a sentiment hardly religious. These cupids are bad ornament and worse art, because of their patent theatrical insincerity.

In analyzing and criticizing ornament, then, one must study it from these points of view: First, it must be beautiful in itself. Secondly, it must be suitable; to the purpose of the building it adorns, to the material in which it is executed, and to the artistic medium. Thirdly, if it consists of architectural, structural members used for a decorative purpose, there must be some

* See Frontispiece.

sufficient æsthetic demand for them, and they must not actually contradict the structure of the building, or detract from its actual usefulness, although it is not necessary for them to express absolutely the hidden construction of the building. Fourthly, ornament must be correct in amount, sufficient to give the desired richness consistent with the building's design, but not so great as to give any appearance of vulgar ostentation. Fifthly, ornament should be placed where it will give the maximum of effect because of the composition of the building; and sixthly, it should be of a size consistent, first with the size and design of the building, and second, with its distance from one looking at it. And in examining ornament from any of these viewpoints, we must always keep in mind that great demand of all true art: sincerity tempered with common sense.

Ornament is a subject so large, and with implication so broad, that it really demands a book in itself. It is at the foundation of many of the arts besides architecture, and it is the side of architecture that enjoys the most universal appreciation, and excites the most universal interest, because it appeals most directly to that decorative need at the basis of all the arts.

CHAPTER VII

PLANNING

Up to this point this book has dealt with architecture entirely as an art of æsthetic design, whose effects are at once apparent to the eye of a beholder. It has dealt with composition and with the material which the architect uses to produce his effects, structural and decorative. Now it must broaden its scope and delve deep into a side of architecture which is less apparent, and, perhaps, less superficially interesting, but upon which all the rest, in a way, is founded.

There can be absolutely no true appreciation of architecture, without some appreciation of planning, and it is a lack of attention to this great subject which has led so many architectural critics like Ruskin, far astray into airy fields of fantastic theories. In the first chapter an attempt was made to show the double nature of architecture; its growth from two ideas, the idea of utility and structural strength, and the idea of beauty; and to point out the unique char-

acter of the art produced by the interreaction of the two ideas. So far, most of the book has dealt with beauty, but this chapter must deal largely with matters of utility and structure, in order that one may gather a clearer notion of the close implication of the two sides of architecture, and their constant interpenetration of each other. For although planning is mainly a matter of utility and strength, it must not, therefore, be imagined that the true architect is engineer when he plans, and artist only when he composes and decorates. The true architect is both artist and engineer all the time, and he must keep his artistic imagination as busy when he is planning, so that his plans may build beautifully, as he keeps his structural sense when he decorates, in order that his work may be saved from caprice and inconsistency.

Planning is not the dull puzzle that it is often considered. The word suggests strange and incomprehensible diagrams of black lines and white areas, and lines of black dots. Planning means much more than a "plan" or many "plans," for planning is merely the science and art of the distribution of all the varied parts of a building, rooms, corridors, etc., with

regard, first, to utility, and secondly, to beauty. A "plan" is merely a diagram to show the arrangement of parts arrived at by means of this art and science.

Planning is a subject which touches modern life at every point; which has always so touched life. The designer of a hospital must know absolutely the requirements of a hospital, how it is managed, what its equipment is, how the parts of it are related. An architect may spend hours in a newspaper office with a notebook, watching, watching, absorbing the methods of administration, because he has the problem before him of laying out a newspaper office. In order to plan proper apartment houses, or tenements, the architect must know just how the people live who are to inhabit them, and what are their greatest needs. And so it goes in the case of all kinds of buildings; the planner must keep in the closest and most practical touch with the life around. It is this that gives planning, when it is rightly understood, such an appealing and fascinating interest, for every building offers a different problem whose solution requires a constantly changing knowledge of people and affairs. Seen in this light, even a plan—de-

spised diagram—may take on a new life and interest.

A plan is a horizontal section through a building, taken at any desired level. It is as though some giant were to take a knife, cut square through an unfurnished building in a horizontal direction, and lift off the upper portion. What he saw when he looked down would be a plan of that building. Walls would be solid lines of greater or less thickness according as the walls were thick or thin. Doors would be blank spaces between spaces of wall, and windows would be similar blank spaces with one or more thin lines, the section of the glass, with the sill below, columns would be solid circles, and so on. The whole arrangement of the building would be revealed at a glance; the relationship of all the rooms and corridors to each other, all the openings, the doors, the windows, the courts—everything.

A plan is, therefore, the architect's best method of presenting the results of his application of the science of planning to the particular problem of the building in hand. In a way it is an abstraction; it is a diagram, but more than any other means at his disposal it makes

clear the results of his skill, and the desires in his mind, to the builder and to the layman as well. To the architect a plan of a building is often as valuable as photographs or sketches, for by the relation of thick walls and thin, wide rooms and narrow, columns and piers, he can at a glance gain a complete idea of the whole construction of the building, as well as its arrangement.

A plan, like any diagram, must be looked at with imagination. The observer, if he wishes to gain the total value of the plan, must build in his imagination walls over the solid places, columns over the dots or circles, he must imagine doors hung in the doorways, and windows placed complete, he must try to imagine the ceiling overhead, and the lighting, and he may then walk from room to room, or through the towering colonnades, master of the building from its plan. In architectural plans there have come to be certain conventions employed to help the imagination. A dotted line from one support to another indicates usually an arch above; so in the plan of a Gothic church the criss-cross dotted lines indicate the intersections of the arches which form the ribs of the vaulting. A

dotted circle in a square indicates a dome overhead and even the design of beamed ceilings is sometimes indicated on a plan in dotted lines. Furniture may or may not be shown, according to the purpose for which the plan is to be used. Often the projecting base of the walls is indicated by a single line just outside the solid portion, and the bases of columns are similarly shown. Border lines can be often drawn around rooms to emphasize their shape, and arrows or axis lines may be used to bring out main entrances, or lines of important communication. With all these aids a plan becomes a very important record of what a building is, and an invaluable indication of its structure.

The science of planning whose results are thus shown demands first of all a careful analysis of the uses of a building as a whole, be it house, store, factory or city hall and an analysis of the uses of all the several portions of which the building is composed. These may be briefly classified as follows:

1—Public Rooms. This class consists of those rooms which are open to the public, or at least to a large number of people. In governmental buildings they are represented by pub-

lic offices and the like, in theatres by the auditorium and foyer, and in houses by the reception-room, or even, by stretching the meaning of the word public, by the living-room.

2—Private Rooms. This class consists of those rooms given up to the particular use of the people for whom the building is designed. Such rooms are private offices and libraries, studies, bedrooms, morning rooms, etc.

3—Means of Communication. This important class consists of corridors, vestibules, halls, staircases, rotundas, and the like. All of these are of importance architecturally, because on their right design and arrangement depends a great deal of the building's convenience, and their æsthetic effectiveness is tremendously important, particularly in public buildings, because so many people are constantly using them.

4—Service. This class consists of all those parts of a building that minister to the lower and humbler wants of man, such as toilets, closets, boiler-rooms, fuel-rooms, store-rooms, pantries and kitchens.

The first thing, then, which the architect has to do in designing a building is to classify the different rooms which the client demands under

some such heads as the foregoing. In some cases he may also have to decide himself what are the rooms required, but usually the client has very definite notions of his own on this point. This preliminary classification has a very important place in the science of planning, for the classification of any room may determine its position; service rooms demand subordinate positions; public rooms demand positions readily accessible, and so forth. And this classification is by no means always an easy matter. A dining-room is usually a private room, but in a family that entertains a great deal, it may come to have almost a public significance. Similarly, a living-room may be at one time a private room, and at another time a public room, and its position has to be considered with regard to both functions.

Once this classification is made, another must follow, a classification of the rooms as regards their importance. In general the public rooms are the most important, but by no means is this always the case. In some houses, for instance, it is the private portion that needs emphasis, and the public room, the reception-room,

is a very minor room somewhere near the door. This classification with regard to importance is even more necessary in arriving at the actual plan of a building than the first classification, for it determines at once what rooms shall occupy the most prominent positions.

For there are important positions and unimportant positions, and this is the key of the whole matter. The most important position of all is exactly opposite the main entrance. This should be self-evident, for the position opposite the entrance has these unique characteristics: First, it can be approached without a single turn, and second, it is the first thing that strikes the eye of one entering. If there are two rooms of an equal importance, greater than that of any of the rest of the building, the most important positions for them are at the two ends of a broad, straight corridor which has the main entrance on one of its sides in the middle. This arrangement allows them to be approached and entered with but one turn and also places them at the ends of the important vista of the corridor. If there are three main rooms of nearly equal importance, one can be placed across a corridor, opposite the entrance, with the other

two at the corridor's ends, or the three can be placed on three sides of a square or circle, with the entrance on the fourth side.

The most important positions in a building are, then, always positions at the ends of vistas, or axes, and from this fact can be deduced the importance of these axes. In planning a formal building the architect usually starts with a line —his "main axis"—and on this axis he plans if possible his main entrance, and his most important features. Now this axis at once implies a certain symmetry, and this symmetry, systematized and ordered, marshalled around a main axis, leading to the most important feature, is at the basis of a great deal of successful planning.

This is because of no mystical metaphysics, but because of the simplest of facts already hinted at. The axis is merely an abstraction of the simplest line of sight.* An open, well-defined axis in a plan leading to an interesting and important room or feature, means an open, well-defined symmetrical view, with an interesting feature as its climax, and such a view is always more beautiful than a view that is absolutely lacking in this orderly character; that is, than

* See Fig. 19, page 236, and the Plate opposite page 236.

a view in a plan that has not been well studied with regard to axis. A well-defined axis usually signifies simplicity and directness as well, for it is always easier to walk in a straight line than to turn many corners. If the axis, then, means usually not only an attractive interior view but directness as well, it is not strange that the architect strives to get this axial feeling in such a large amount of his work. The layman does not sufficiently appreciate this. To him symmetry means very often money wasted, unnecessary monumentality, cold formality. He sees some old-time house in the country built at any number of periods, with an old part there, and a room added here, and another there, and a lean-to shed around the corner, and the picturesque atmosphere of it strikes him at once. It seems to him beautiful, with its huddling roofs and grey walls and many-paned windows and wandering plan. He cannot understand why the architect tries so often to get a formal symmetry, when such wandering lines as those of the old house are so charming. The layman does not appreciate that behind the architect's desire for symmetry lie those two important

considerations: interior effect, and directness of access.

These two considerations are, of course, more important in formal public buildings than in houses. So much of the interior effect of a house depends upon its furnishings and decorations, that any overpowering architectural effect is out of place, and such a comparatively small number of people use a house that directness of access is relatively unimportant. The house, then, may be unsymmetrical, provided that no obvious sacrifices are made to produce picturesqueness. The picturesque house which is architecturally—and practically—a success, is the house whose rambling lines seem to grow naturally from the real demands of its separate parts and of its site. If, on the contrary, a house has to be forced into picturesque outlines by making its rooms of unnatural sizes and strained shapes, and related to each other in queer and crooked ways, the house is bad; too great a sacrifice has been made to picturesque effect. In an old English manor, built at four or five different periods, and added to gradually, as its changing owners wished, there is

some excuse for this crookedness, due to the changing demands on its use and the changing methods of construction, and where a rambling house has so grown, it often has a compelling atmosphere of charm, because it so eloquently expresses its long history. But in a new American house, built all at one period, by one archi-

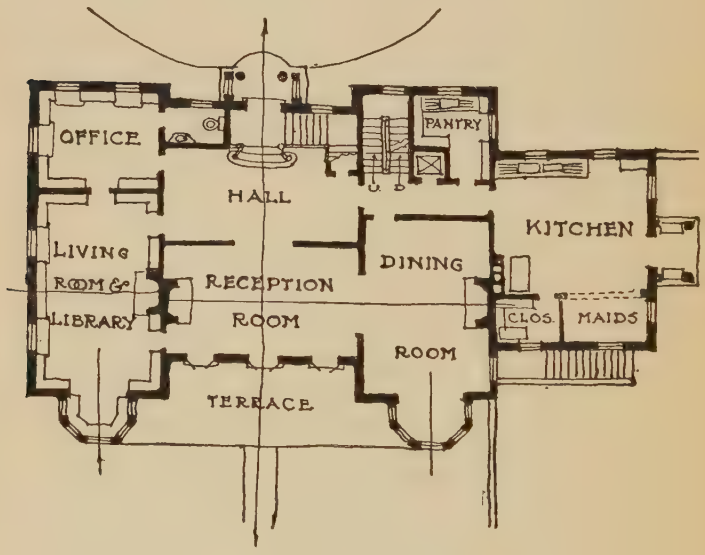


Fig. 18. A house in New Haven.

tect, for one owner, there is no excuse for any such crookedness. When the atmosphere of age and unstudied picturesqueness is too much

sought, there results inevitably a certain "stagey" quality, a certain lack of reality, that is as unpleasant and insincere as its probable owner's newly manufactured coat-of-arms. This kind of informal picturesqueness is best when it is a result of the problem presented to the architect, and not when it is the end for which he must seek.

Even in informal houses the architect must never lose sight of his axes. They are particularly important where one or two rooms open into each other. Here is an example, an actual house in New Haven. The plan of its main portion is shown in Fig. 18. Here there were to be arranged a library, a reception-room, a dining-room, a study and a stair hall. The house was to be used for entertaining a great deal, so that the reception-room had to be large, and arrangements were required for throwing the greater part of the first floor together. The library, on the other hand, was to be kept private, as a family living-room. The problem was solved as the plan shows. When a guest enters the front door, which is on a landing raised three steps above the rest of the floor, he is con-

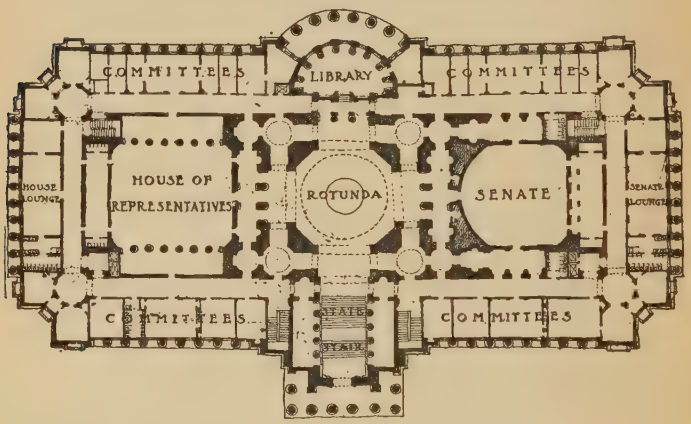
fronted immediately by the wide arch that leads to the reception-room, on the axis of the door and hall, and in the middle of a symmetrically panelled hall. The reception-room opens through three large windows onto a brick terrace so that there is immediately an interesting view on the axis—arch, room, window, terrace and garden behind. The reception-room itself is a large and rather formal room with a fireplace at the centre of one end, and a wide doorway in the centre of the other, that leads into the dining-room. The dining-room has its fireplace directly opposite this door and opposite the reception-room fireplace. When dining-room and reception-room are thrown into one, this strongly marked axis through them both, with the fireplace—each room's most interesting architectural feature—at its ends, binds both rooms into one whole; and produces at once a spacious, quiet dignity. Now this axis is crossed by the axis of the front door at a point exactly in the middle of the reception-room, so that anyone in the reception-room anywhere near its centre, commands four differing, interesting, and yet studied and composed views: the dining-room fireplace, the reception-room

fireplace, the front door and stairs, and the brick terrace and garden. Such a result could never be obtained in an absolutely unsymmetrical plan, for, if the relation of the parts were kept, the beauty of each would suffer, and *vice versa.*

If these axes are so important in simple houses, it may be readily appreciated how tremendously important they become in public buildings where a great impressiveness is one of the important ends to be achieved. It is one of the chief faults of our earlier American architecture that this important question of planning was so woefully neglected. Building after building still exists, which, though beautiful without, has no coherent plan, no strongly marked axis, no impressive interior. The Court House at Springfield, Mass., is an example; the conception of the picturesque exterior, with its turrets and gables, has been the ruling idea, and the plan is chaotic, with the various necessary rooms scattered anywhere. In time this lack of planning sense became almost a tradition in American architecture, and our country is filled with court houses, and city halls, and post-offices, in which the exterior design has absolutely controlled the interior arrangement, to the utter

loss of both convenience and interior effect, where entrances are mean, and corridors narrow and dark, and stairs ill-placed and crooked.

It is only during the last thirty years that we have begun to learn how to plan. Now things are changed from those old days, and for contrast let the reader look at the entrance and



Missouri State Capitol, Jefferson City, Mo.

Fig. 19. Note the careful "axing" of all the important corridors, etc., and in the plate note the value of the main axis in making an impressive interior.

rotunda of the Missouri State Capitol,* and then at the plan. Here, interior impressiveness has been sought and effectively achieved and

* See the Plate opposite this page.

MISSOURI STATE CAPITOL, JEFFERSON CITY, MISSOURI
(STATE STAIRWAY)

Compare this with the plan, and notice how the planning of State Stairway, Rotunda, and Library produces a composed and impressive view.

the plan is well arranged, accessible, clear, and monumental, befitting the Capitol's purpose and dignity.

Imagine, then, the architect who is planning a building to have embodied in his plan all the foregoing principles. He has decided which are his most important rooms, and placed them in the most important positions, and he has decided on the axes which they determine. He must now begin to study the plan in more detail, so that each portion of the building shall be fitted to perform its purpose in the best and simplest way. To do this, he must keep fixed fast in his mind the actual use that each smallest portion is to receive, and know just how this use must affect his plan, and what arrangement it demands. This, again, is a question of the relationship of the parts of the building. It is merely carrying the method of the architect's preliminary analysis one step further and applying it, not to the building as a whole, but to each separate portion of the building.

He will probably begin this analysis by the consideration of the most important rooms—the public rooms. Now these have certain definite requirements, which it is well to keep in

mind. The first requirement is, of course, safety. Safety in a public room means more than strength of construction. It means safety of health, it means liberal exits in case of fire or panic, it embraces a number of questions of heating, of ventilating, of arrangement. The second requirement is convenience, fitness for use. That is, in a lecture hall, or theatre, each person should be able to command an unobstructed view of the stage; and the hall should be so planned that each person can hear without effort. In a public office, convenience demands that each person shall be able to enter, to attend to his business, and to leave in the easiest possible manner. In a library, convenience demands such a relation of parts that anyone may enter, obtain the desired book, read it in comfort, and depart with little effort and delay, and yet always be under the librarian's control, so that thievery will be almost impossible. And so on for every kind of public room; the architect must imagine its every use, and make arrangements for it.

In general, then, the following questions will arise in the design of a public room which may affect the planning of the building:

First: How many people will use the room? The answer to this question will decide the number and size of entrances and exits and the amount of corridor space necessary to take care of the people.

Second: How long will it be used at a time? The answer to this will settle the amount of ventilation necessary; it will also determine whether or not public toilets should be near at hand, and if so, how many.

Third: Exactly what is its purpose? The answer to this will determine whether it shall have a banked or level floor, or a stage, and if so, of what kind and size, and it may bring up the whole question of acoustics, a science in itself so complex that only the merest reference to it is possible here. Acoustics may often be the governing feature in the shape and size of a room. If the portion under consideration is a suite of public offices, the answer to this question will decide their exact relation to each other, the relative size of public and private parts, the number of doors, and sometimes the exact force and direction of the lighting.

This outline will make plain at once the intimacy of the connection between planning and

life; it should also show how absolutely the architect is governed by the needs of the buildings he is designing, and how the arrangement of a good building is a direct result of these factors. When the architect has solved these questions of the use of the public portions of the building, he may turn to the next great question, closely connected, the question of corridors and halls and means of circulation. Here he is less bound down by complex questions of particular use than in the design of the public rooms themselves, but even in corridor design he must always keep dominant the factors of safety and convenience. Corridors should always be as straight as possible, and always wide, airy, and light. A cramped, close corridor, lighted by electricity in mid-day, is an inexcusable feature where room is plentiful and money not stinted. A corridor with steps that are unexpected and not expressed in the design so that their existence may be readily grasped from a distance may be dangerous; in a panic it may be the cause of many deaths. Even in corridor design the architect must keep its use clear in his mind.

We have already considered the importance of corridors and rotundas and the like in giving

impressiveness and grandeur to a building and the bearing of this upon planning. It is equally true that stairs are of tremendous importance. Their practical use is self-evident and so should be the qualities their use demands in them; directness, simplicity, such a slope and steps as will be comfortable to ascend or descend, light—everyone knows, probably, from experience the danger and discomfort of a dark stair—and ease of access to all portions of the floors it connects. The æsthetic importance of stairs is less evident, but experience and open eyes will soon show it. There is an appeal about a beautiful and well-planned stair that impresses unconsciously the most callous observer. A good stair is an invitation to ascend; it suggests all kinds of interesting features above; it fills one with the zeal of the explorer and an instinctive love of the unknown, where the poorly designed stair, crowded into a dark corner, repels. There is, besides, an innate grace in the relation of the sloping and level lines of the railing or balustrade that is lovely, and curved stairs are a delightful feature that the French are particularly skilful in using.

Even in the simplest stairs of our houses this

is true. The simple straightforward stairs of the Colonial houses of our ancestors bear eloquent witness, climbing direct and true with carved newel and twisted baluster to a broad landing lighted by a wide and often beautifully decorated window near the top. Such a stair gives at once the impression of fine large rooms to live in on the floors above. It serves not a little to give that impression of dignified homeliness which is so well nigh universal in those houses, and in public buildings, where important rooms are often necessarily on the second floor, and where sometimes this second floor is the main floor, the *"piano nobile"* of the building, stairs are of even greater importance.* For example, take the great stairhall of the Opéra at Paris.† These great flights, with easy steps, and sweeping balustrades, though perhaps over-ornamented and ostentatious, give at once an effect of majesty, an impression of being built for crowds of spectators, that is usually totally lacking in our American theatres, where the patrons of the cheaper seats are forced up interminable dreary stairs, rough, uncouth, uninviting, ugly. In the Paris Opéra, with a truer

* See the Plate opposite page 236.
† See the Plate opposite this page.

OPERA HOUSE, PARIS, FRANCE
(GRAND STAIRWAY)

One of the best examples of the monumental and decorative treatment of a necessity —the stairway.

democracy, the topmost galleries open on this same great stair; all the spectators are considered one great beauty-loving crowd. Or take the Boston Public Library, with that majestic wide flight leading up between the two guardian lions, and then dividing into two symmetrical flights that climb by painted wall to the marble arcade above; that is a staircase that is not only convenient, but one of the most beautiful features of a beautiful building as well. The stair correctly planned and conveniently arranged is one of the most salient examples of how architecture takes necessary requirements and converts them into objects of beauty and delight.

There remain to be considered two classes of rooms, private rooms and service rooms. In these the architect has less complex problems to solve than in the case of public rooms and means of circulation. In their design, however, the good architect should use as busy an imagination and as careful a judgment as in the more important rooms. He will see that the private rooms are accessible to those who use them and that every requirement of comfort or use has been met. He will see that their privacy is preserved, that each has just the right outlook for

its purpose, and that each is properly related to its dependences, and the hall which serves it. The architect's care must extend to every humblest room; he must see that his arrangement of service rooms makes an easy building to run. He must be thousand minded; he must think with the mind of cook, of chambermaid, of boiler tender, of coal heaver. He must furnish, if possible, a separate and concealed service entrance, so that all the necessary materials to be used in the service portion of the building can be delivered promptly and directly without interruption of the more important functions of the building, without intruding unduly or with an unfortunate ostentation. If he can do this, and induce his client to accept the plan he has produced with so much care and forethought and imagination, he will not only have helped to produce a beautiful building, but he will have made it possible for everyone connected with the building to lead more efficient and useful lives.

A good plan for any building must be arranged to fulfill in the best way all the conditions required by its varied parts. But good planning must accomplish more than this: it must make an arrangement that is not only

practical to build, not only easy to run, but strong. And this requirement demands a tremendous amount of study. The architect has to see to it that all his supports are heavy enough, and so spaced as to permit a simple and easily constructed floor or roof above; he must see that chimneys run as directly as possible and that plumbing is simply located.

With the growing use of steel, the construction element of planning has been both simplified and complicated, for although it is possible to carry heavy loads over long spans by the use of steel beams, there is an immense amount of calculation and study required in their use. So complex has steel construction grown, that it has become quite a science of its own, with its own specialists, and the steel construction of most large buildings is usually designed by such structural engineers. Steel has made possible the high buildings of our cities; it has made fireproof buildings relatively cheaper to build than they have been for many centuries. In a way it has set the architect free from many stunting requirements of wood and masonry construction, and allowed him to realize dreams of lightness and soaring height never before conceived, so

that our great cities are little by little developing sky lines which remind one of illustrations to fairy stories.

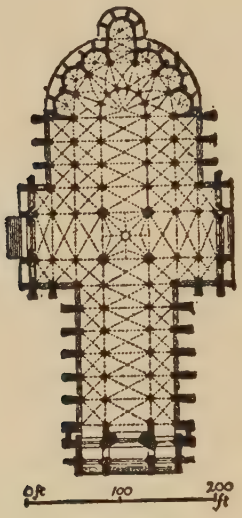
And yet steel has architectural disadvantages. Modern forms of steel construction lead to rectangular, uninteresting plans. Its own self-contained strength is a disadvantage, for part of one's pleasure in the great architecture of the past lies in the manner in which the architects of Roman and Mediæval days made the obstinate requirements of their structural materials into things of beauty. The vaults of Rome, the buttresses of Gothic France, the open-timbered trusses of English halls, are examples of complex structural necessities transformed into objects of enduring beauty. But the essence of steel construction is merely a cross beam resting on two columns at the ends; it exerts no side thrust; it requires no buttresses. It is a straight, starkly simple system and leads to straight, starkly simple plans. It is not an interesting form in itself; it has neither the curved grace of the vault nor the exuberant complexity of an old wooden truss; like many a puritanical mind, it is unassuming, strong, and cruelly unbeautiful.

Of course, there are cases where it has been beautifully treated—some have already been noted—but this has been done at great cost and by forcing the material into other forms than those it first suggests. In the great majority of cases steel architecture is an architecture simply of beam and column, and as such it provides buildings often of an uncompromising rectangularity. It still remains for the architects of the future to transform this uncompromising rectangularity into a new and natural beauty.

Even in smaller work, the use of steel often leads into minor insincerities. There are many country houses built to-day where fireplaces on upper floors have absolutely no relation to the plan below; convenient steel beams allow them to be swung almost in mid-air. Sometimes chimneys entirely false, supported on steel beams, put in merely to give balance, begin just under the roof. This is not good architecture, it is a mechanical trick, and a good plan is never a tricky plan; the good plan is straightforward and simple, without "fakes."

The good plan always expresses construction; small house or large, cathedral or town hall or parliament building, the plan should re-

veal at least the essence of the way it is built. Heavy walls should run through where the weight is heavy, and, if possible, the main divi-



PLAN OF AMIENS CATHEDRAL.

FIG. 20. A plan that is both economical and effective.

sions of the plan should follow these main constructive lines. Arches should be amply buttressed and the plan should reveal the buttress. Notice this plan of Amiens Cathedral, and see how the heavy cross buttresses at the

sides are placed where they best do their work, with their long axis parallel to the cross thrust of the vaults. And notice how around the apse the great main buttresses are used to divide the chapels and how the crossing of nave and transept is emphasized by the heavier piers that are necessary to carry the great square vault above them. It is a perfect plan; every part does its work simply and easily; and every part is made to work in as many ways as possible.

This is an ideal that every plan should strive to emulate. There should be a constructive reason for every important feature, and a practical reason behind each constructive feature. Breaks in the outside wall should indicate changes in function within, and important structural walls should separate important rooms, if possible. This is an ideal that is impossible of absolute realization, particularly in small houses, where the demands are so complex and the construction so simple, but it is an ideal that is always in the architect's mind consciously or unconsciously, and it is an ideal that has had a tremendous power in the development of architectural forms throughout the ages.

Planning has still a third requirement to ful-

fill. It is the science of the solution of the problem of a building with regard first, to practical use; second, to constructive simplicity and strength; and thirdly, to beauty.* Indeed, in planning, as in every other branch of the art of architecture, the question of beauty is so implicated and bound up with all the other questions that confront the architect, that it is impossible to consider them entirely apart. So, in our consideration of the practical side of planning, we are led inevitably into this structural question; so the constructive element was considered from the point of view of beauty as well. It will, therefore, not be necessary to consider the subject at any very great length again.

There is one point, however, that must be insisted upon. And that is the fact that the architect's solution of the plan determines absolutely the general character of the outside appearance of a building, and its interior effect. The reverse is also true. If an architect, or his client, decides that a certain style of exterior or interior design is required for a building, by reason of the adjacent buildings, or the character of the site, or tradition, or for any other reason, then this choice of style is bound to exercise a tre-

mendous influence over the planning of the building. The layman often forgets this. He thinks of the walls and roof of the building merely as a shell, and the interior arrangement as a separate and unrelated kernel. He may desire for himself a simple Colonial house outside and a complex arrangement of rooms inside which is directly contrary to the Colonial straightforward simplicity. And then he wonders because his architect, in striving to meet both demands, creates a result that satisfies neither demand absolutely. If every educated man and woman in the country once truly realized the absolute interdependence of planning and exterior design, there would at once develop a sane tradition of popular criticism of architecture, a development which would raise our architectural standard more than any other one thing.

And this interdependence of planning and design is equally important in the interior, and perhaps more so, for there even more strongly the arrangement not only suggests but actually creates interior effect. This has been already referred to at some length, but it cannot be stated too often, or too strongly. Our country

has been filled with houses that are mean and gaudy within just because the designer has attempted to produce effects his plan contradicted; he has made elaborate doors lead to narrow and congested halls or he has treated tiny rooms with miniature columns and entablatures all complete, thinking thereby to gain an effect of grandeur.

The good architect, on the other hand, will not try to force effects his plan does not warrant, nor will a client, if he is wise, attempt to make him do so. The architect will always keep in mind the interior effect he wishes to produce, be it grand or modest, and he will make his plan with this idea clearly before him. He will see that the effect is suitable to the purpose of the room, and not attempt to give us living-rooms like the state reception-rooms of an eighteenth century palace, nor dining-rooms too coldly monumental, nor churches like barns, nor great public halls that are bare and undignified. He will plan always to give an interior effect that is absolutely in harmony with the use of the interior, with the plan, and with the exterior.

It should be evident by this time how infinitely complex is the science of planning. It is

like some of those mathematical problems which algebra cannot solve because there are too many variables, problems that yield only to calculus. In the case of planning the variables are four: practicability, constructive demands, exterior effect, and interior effect. And they ought all to be always in the architect's mind at once; not at one point one of them, at another point another; for every smallest detail of a plan must be considered from all four standpoints. And it is this fourfold attitude that the good architect always adopts.

The best way to illustrate and clarify a few of the principles of planning is to gain some insight into the way an architect goes to work to plan a building. This is easiest done by considering an actual problem of some simple sort and attempting to solve it.

Let us take such a problem. Imagine a wealthy man with a large library and art collection which he desires adequately to house in such a way that the public can be admitted at certain times. He has formulated the problem in some such way as this:

Rooms desired:

Large gallery for pictures and sculpture,

about 80 feet by 30 feet; perhaps with an upstairs gallery.

Library about 20 feet by 30 feet.

Upstairs offices for repairing, binding, etc.

Private entrance vestibule, for his own use.

Public entrance and vestibule.

Style desired: No absolute style to be followed, but the ideas of grace, of solidity, and dignity to be emphasized.

Site: A level piece of ground near his house, upon a principal street.

This programme is the basis on which we must begin. There are a few points immediately self-evident which will help us in the solution of the

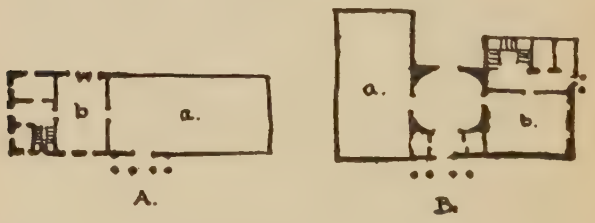


FIG. 21. A and B are both bad because of a false balance between important and unimportant rooms.
a: The art gallery.
b: The library.

problem. First, the ideas of dignity and solidity to be emphasized suggest at once a somewhat

formal and symmetrical treatment. This prevents us from stringing the rooms out in a line, as in Fig. 21A.

In any such arrangement the main entrance comes at a very awkward place in the gallery and the exterior does not express the interior. Equally bad is any attempt to make the library balance the art gallery by putting both on either side of a vestibule, as in Fig. 21B. In this solution the front balances, but the building is a queer shape, difficult and expensive to build. This solution also suggests at once a corner lot, and the building is not on a corner.

Let us try to analyze the problem, with regard to the headings suggested in the early part of this chapter, as follows:

Public Rooms—Art gallery, vestibule, possibly, to a less extent, the library.

Private Rooms—Generally, the library, the repairing and binding offices.

Corridors, etc.—Stairs to the upper floor.

Service—Heating, storage, etc.

Then let us make another analysis with regard to importance. The art gallery is undoubtedly the most important room when both public and private use are considered and the library

is the room of next importance. All the other rooms are of minor importance. Now, the most important position is the position on the main axis, opposite the entrance. At once, therefore, some such solution as this might be possible. (Fig. 22A.)

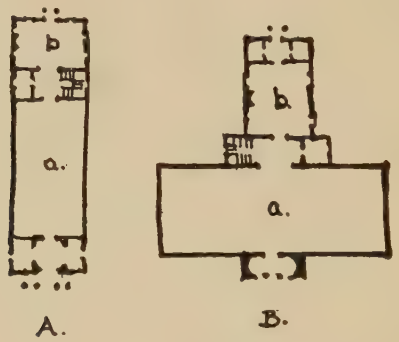


FIG. 22. A is a logical arrangement but unsuited to the position of the building on an important street. B is a better solution, but the rear portion of the building is still not absolutely correct in arrangement.
a: The art gallery.
b: The library.

But this is also unsatisfactory, because the short, uninteresting front is towards the street, and the long façade stretches away from the public. In addition, the building is of an unpleasantly long shape. What possible solution is there remaining? Let us try a plan similar

to the plan above, but somewhat different. (Fig. 22B.)

This plan seems to answer all the demands of the problem absolutely. It is dignified and solid. The art gallery has the most important position with the library correctly related. Library and art gallery are all near the entrance, easily accessible. There is a private entrance close to the library. Only one drawback to the plan exists; the fact that in a way the art gallery is broken in two, and some valuable wall space lost at the back, where the library comes. This can be readily made up by slightly increasing the length of the building. And an art gallery can stand dividing in this way which gives a little variety. In addition, the library will never be so patronized by numbers of people that the crowds entering and leaving it will disturb those who are looking at the gallery. This objection being disposed of, we may decide on this plan as in general the correct one and begin to take it up more in detail.

The Art Gallery: The prime necessity in a gallery is unbroken wall space. It will, therefore, be necessary to cut all architectural features in the room down to a minimum and to

cut out windows. Sky-lighting is the thing to use.

Library: Coziness, dignified richness, and wall space for books are the prime requisites. But sky-lighting in a library is very bad and hard on the eyes. We must, therefore, have direct window illumination for the library. A fireplace might also be desirable.

Corridors, etc.

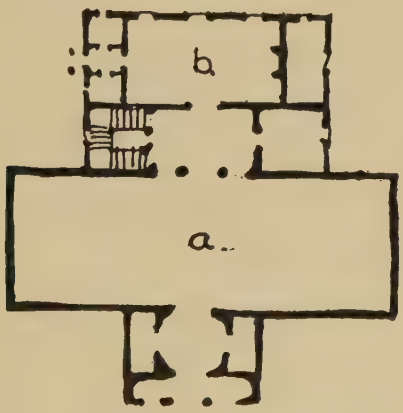
Vestibule: This need not be large, as no great crowds will ever patronize the building; it should, however, be dignified, and, if possible, have small coat-rooms attached.

Connection between Library and Art Gallery: To put the library close to the art gallery is too architecturally brusque. A lobby might be better, to make a softer, more graceful connection; a place where people might pause in their tour of the gallery and sit down to rest. It might be possible to put the upstairs gallery the owner desires over this lobby. It would make a charming feature, just sufficiently interesting to mitigate the baldness of the gallery.

Service: Service stairs, perhaps also a small dumbwaiter, are necessary to reach the repair-

ing and binding rooms which we will place over the library. A lavatory and coat-room adjacent to the library seem advisable as well and the rest of the service, heating and storage can go in the basement, so that we need not be concerned about them now.

We have, therefore, arrived at the following plan. (Fig. 23.)



THE FINAL SOLUTION

FIG. 23. There is ample lobby space, a vestibule between gallery and library capable of very attractive treatment, and, furthermore, a compactness of the whole which gives large space for storage, toilets, repairing, etc., on the first floor.

Now this plan at once determines our archi-

tectural effect both outside and in. This is a complex matter, so I shall only touch it here and leave my readers to carry it as far as they please, by imagining different possible interiors

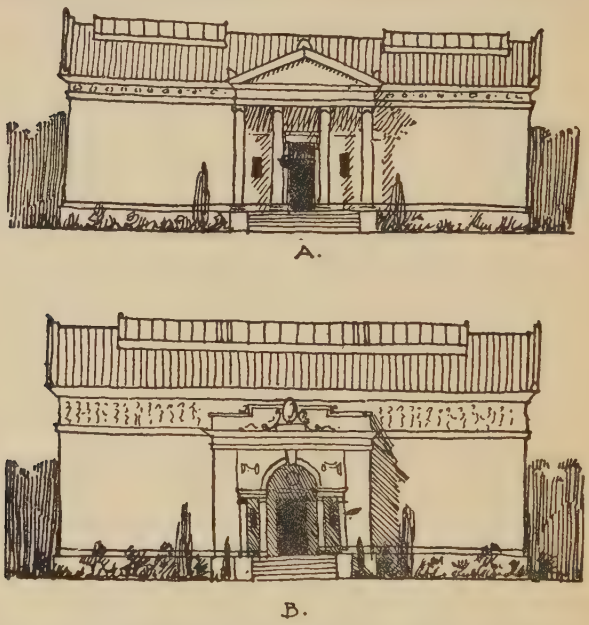


FIG. 24. Two possible elevations of the scheme shown in Figure 23. Of these B is the most expressive.

for these various rooms, and different possible treatments for the front of the building.

Exterior treatment: The plan we have chosen

limits us definitely to a treatment of two simple blank walls, with a monumental entrance motive projecting in the centre. That is, we are limited to one simple composition of shapes. Also, since the gallery is sky-lighted, it might be well to express the sky-lights, and attempt to express the fact that there is but one long room behind. For this reason, we might prefer a treatment like Fig. 24B to one like Fig. 24A. Fig. 24B undoubtedly contains one large gallery with an entrance and vestibule in front; Fig. 24A might be two rooms with a corridor between.

Beyond this point the design becomes a question of personal taste and preference, but thus far it is the plan that has been the governing factor. Similarly, in the interior, although there are an infinite number of treatments possible, the number of schemes is limited by the plan.

In this analysis of a simple planning problem, no account has been taken of many other factors which might influence the planning in one way or another; such as the factors of cost, of orientation, of material and so forth. These factors have been purposely omitted in order that the problem might be kept simple and easily

grasped. As it is, however this little attempt at planning a simple building may have given the reader some idea of the architect's real work, some conception of the thousand things he must decide, some idea of the fascination of his profession.

Planning is by no means the uninteresting and abstruse matter that it is usually considered, without importance save as a humdrum matter of convenience. On the contrary, it is at the very foundation of all good architecture; for the plan determines the character of the building outside and in, and it is good planning, as well as good design, which has made, and still makes, the great buildings of the world not only suitable for their purpose but also beautiful for our eyes, and strong to endure, so that the art of architecture, through planning, is the greatest, the widest, the most practical and useful of all the arts.

CHAPTER VIII

THE MEANING OF STYLE

THERE is one of the many sides of architecture that has been mentioned in the first chapter which needs more discussion. Up to the present we have been concerned to a large extent with the material side of architecture. Architecture has been considered as a matter of form, æsthetic and practical. It is one of the glories of architecture that it is more than this form. It has a spiritual and intellectual message for us as well as an æsthetic stimulation. For behind the forms which architecture uses, and behind the plans which it adopts to solve the needs of the people whose art it is, there lies a meaning which is deeply bound up with the whole history of mankind. And it is this meaning which must be considered here.

Architecture is a key to history when this side of it is rightly appreciated and understood. Every quality of the builder is as truly mirrored in his building as every quality of a writer is

expressed in his poem or play or story. Indeed, architecture is often even more relentlessly expressive than literature; for the architect's building is always the product of at least two personalities, that of the architect and that of the owner of the building, and oftentimes it is the product of a great many more; it may be the expression of a collective personality, of a guild, of a state, of a religion.

Moreover, the whole art of architecture, as the last chapter sought to show, is absolutely dependent upon planning, and planning, in its turn, upon the practical needs of those people whose art it is. Architecture, then, is always the result in any one period of two main ideas: the idea of the needs of the people, and the idea of beauty which is prevalent at that period. And these two ideas are bound together by a common desire and purpose—the desire to create a beautiful building—and are mutually interdependent.

One may, therefore, very well see how probable it is that architecture is one of the most complete expressions of life that there is. Poetry and music and theology give us an expression of the ideals of beauty and goodness

of the times that produced them; and political and economical history furnish us with the practical conditions of existence; but in architecture alone can we find an art which by its own character, and because of its very nature, expresses both great sides of existence and mirrors both the wealth and the dreams of humanity.

This is a fact which most people unconsciously appreciate. They begin when they are children to think of the Middle Ages in terms of castles and turrets, as well as of knights and men-at-arms. Later, as they grow older, they begin to think of cathedrals and monuments, because in these buildings, more than in any other work of the time, the spirit of the Thirteenth Century flourished complete. The Gothic Cathedral is fascinating because its style is what it is, and its style is the direct result of the life of that far-off time.

Style in architecture is merely a manner of building that is different from some other manner of building. It includes in its scope not only ornament, but methods of construction and planning as well. The so-called "styles" of architecture are thus named by a limitation of the

word "style;" they signify merely convenient heads under which we can classify buildings, first according to date and nation and second according to the forms originated at those dates and by those nations. Thus one speaks of the "grand" style in architecture, meaning a large way of conceiving and ornamenting buildings, and one may also speak with equal propriety of the Roman style, or the Gothic style, meaning either the style of Roman buildings, or Gothic buildings, or modern buildings which use analogous forms.

This use of the word is very puzzling when one attempts to apply it to modern architecture. According to what has been said before, the buildings that are being put up at the present time ought to be in a modern style expressive of our life and needs. Yet most of our modern buildings are built in one of the historical styles, Greek, or Roman, or Gothic, or Renaissance styles developed in periods when the whole tenor of life was vastly different from what it is to-day. This seems at once an obvious contradiction, and a contradiction which, if true, imperils the entire validity of the thesis that art is a complete expression of life.

There are many people who believe the contradiction real, and, therefore, claim that our modern architecture is false, and not expressive of ourselves. They would like to see the American architects strive after originality at all costs. They consider tradition the great bugbear of modern American art, and they have visions of an American architecture to be born suddenly, full grown, out of our national life as Athena sprang, all armed, from the head of Zeus.

Their claim seems at first well founded and sound. Sincerity is a virtue in any art and it seems self-evident that sincerity demands a different style for the building of a steel frame hotel or office building from the style the Romans used in building a great temple, or the French in building a cathedral or château. But here it becomes necessary to proceed in our thinking with great care, and to be absolutely sure of the exact meaning of the word "style" as we use it. The whole force of any argument with regard to this matter will depend upon our exact definition of this word. We must be sure that when we use the words "American style," we are using them in exactly the same sense as

we use them in the expressions "Greek style," or "Roman style," or "Gothic style."

It is in a failure to discriminate at this point that there lies the fallacy which is the weak link in the chain of argument of those who are clamouring for originality, and accusing our architects of subservience to an outworn tradition. For when they speak of the American style, they mean simply, the American method of building beautifully. They mean the American method of making the buildings our civilization demands and produces, objects of beauty. In short, they mean the whole American method of architectural composition, both as regard to planning and to exterior and interior effect. But when these critics speak of Greek style or Roman style, do they mean the same thing? When they say that such and such an American building is bad and insincere, because it is built in such and such a style, which is foreign to us and our wants, they mean that the building in question is decorated with architectural forms and details of the foreign style. In other words, when they speak of an American style, they are speaking in a large and inclusive way; and when they speak of Roman or Gothic or

Renaissance styles, applied to modern work, they refer merely to the forms of the architectural detail with which a building is dressed. There is no innate contradiction in the fact that an American building may be a perfect example of an American style, and yet be built in one of the historical styles, for the word style is used in two different senses. In one case it refers to general facts of composition and structure, and in the other, to an accepted architectural alphabet of forms.

A single visit to any large city should prove this at once. Let the reader select any two large office buildings, or apartment houses, built each in a different historical "style" from the other. All the detail on the two buildings is different; one may have the pointed arches, the delicate tracery, the crockets and finials of flamboyant French Gothic, and the other the stately columns and entablatures and round arches of Rome.

Yet if one could get a mile or two away from these two buildings, they would look alike in every general respect. Both would appear as rectangular box-like masses, perhaps with small and unimportant roofs; with some sort of deco-

ration near the top and some sort of decoration near the bottom. All between would be a surface of wall emplaided with tiny windows, close together. Anyone who has seen the silhouette of New York or Chicago, or Pittsburgh, or San Francisco, will appreciate the truth of this. All the buildings are similar in general line and effect; all have the same hall marks of nationality. In their square shapes, in their height, and in the size and number of their windows the effect of the steel construction is revealed; the spirit of modern America breathes through them. They are unique, those silhouettes of our American cities; as different from the silhouette of London, or Rome, or Paris, or Constantinople as our life is different from the lives in those great capitals, and it is our architects that have made this silhouette. This unique outline in all its strength and daring, and occasional awkwardness, is one sign of the fact that they have evolved out of our needs a national style all our own.

Even this explanation, however, does not suit some of the critics of our modern architecture. They acknowledge the Americanism of it up to this point; but they are still not satisfied. They

look back over architectural history, and point out the fact that the Greeks built in one way and the Romans in another, and the peoples of mediæval Europe in another, and so on, not only as regards planning and composition and outline and mass, but also as regards detail and ornament. Each period of each nation seems to have had its own alphabet of decorative material, its own unique feeling for architectural ornament. We, on the other hand, have developed no important new decorative forms; and these critics consider this a sign of some strange lack of creative ability on the part of our architects, and of artistic sensibility on the part of the majority of the public.

And they go further than this. They point out the example of modern Germany, of Austria, of the Scandinavian countries, and to a less extent of Great Britain, where more and more architects seem to be designing with a new spirit of freedom, and seem more and more to be passing by the architectural traditions; where many successful new forms are being developed and used. If this *Art Nouveau,* this *Secessionism,* is so virile and successful abroad, why is it that American architects are

content with what is claimed to be a worn-out tradition?

This question can best be answered by a consideration of the history of architecture; perhaps from a point of view slightly different from that adopted by those who make these criticisms of our art. They point to the developed styles of certain nations and periods for examples to emulate; we must attempt to find the causes and influences behind the developments themselves that made the styles of the past what they are. In this consideration we may well omit the early oriental styles, as too little is definitely known of their origin and development, and as, moreover, they were early petrified by civilizations dominated by priesthoods whose traditional beliefs admitted of little genuine progress.

In Greece, on the other hand, there was no such static rule of tradition; the Greeks, as has been noted earlier, were always striving after an unattainable and ever-growing ideal of beauty, an ideal that grew as rapidly as their powers of achievement. Furthermore, Greek history is well known, and completely understood; so that it is not difficult to trace the de-

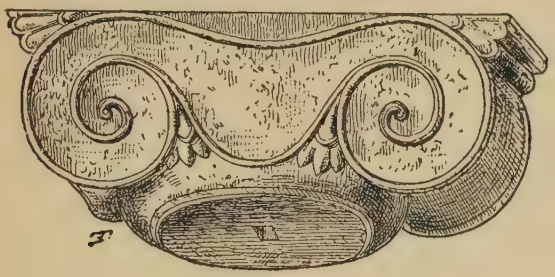
velopment of the Greek styles, and to discover the causes which produced them. For instance, it is definitely known, and proved beyond a doubt by contemporary inscriptions, that in the earliest days of Greek civilization, days before the time when the tribes which made the historical Greek nation had reached their final homes, the entire Eastern Mediterranean was inhabited by peoples living in close commercial and cultural relations. Even at that early date colonies of the people from the Greek Islands had settled in the rich country of Egypt, and that great nation of sailors—the Phœnicians—drove a thriving trade between one country and another.

It is not strange, therefore, to find that the art of this early time had many common, international characteristics and motives. We find identically the same patterns of scrolls and rosettes in Crete that we find in Egypt. We find the lotus of Egypt and the palmette, or palm leaf, of Assyria in every country; sometimes modified, oftentimes used in a way which shows that the origin was forgotten, or unknown. We even find that the Assyrian palmette and the Egyptian lotus, may have been two variations of one and the same elementary form.

And the differences between the styles of the different nations are equally easy to explain. They are due, first, to differing religious and social ideals of life; second, to climate, and third, to material. There was in the autochthonous Greek art no attempt at making an original national style; these early Greeks merely built as their needs required and their materials suggested. For their decorative details they borrowed right and left. They used every motive that seemed to them beautiful, whatever its origin, and then, because they were more skilful at making pictures than most of their neighbours, and because they enjoyed it, they added to the borrowed forms certain natural forms which they loved: fishes—particularly the octopus—bees, and great long-horned cattle.

When the Hellenes—the people we know as Greeks—came to Greece and settled it, either peacefully or by conquest, they gradually absorbed a good deal of the aboriginal art. They were a people of different origin, perhaps of different race; they came from the dim North, a people whose birth is lost in the fog of the past; but they found in the goodly peninsula which they came to inhabit an art and a civili-

zation more highly developed, in some ways, than their own. And this they did not scruple to adopt wherever it fitted their needs, nor did they scruple to modify it to suit their own traditions. The result of this amalgam of native and foreign influences can be seen not only in



Early Cypriote Ionic Capital.

Fig. 25. Many similar early capitals prove the Ionic capital to have been developed from Asiatic, non-Greek origins.

early Greek architecture, but in Greek mythology and literature as well. The many loves of Zeus may be but idealized stories of the gradual combination and marriage of the pure Hellenic religion with all the old local religions; and the Doric order, though theories concerning its origin are at best but hypothetical, seems probably compounded of analogous Hellenic and aboriginal traditions; perhaps the column is

due to the first, and the entablature to the second. Certain it is that there are resemblances between the Greek Doric entablatures and those used by the prehistoric peoples before them quite as strong as are the differences between the columns.

But Greek architecture is more than the Doric order. The Greeks developed the Ionic and Corinthian orders as well, and both of these seem to have been non-Greek in origin. That they were not developed to any very great extent on Greek soil itself until comparatively late times, while the Doric was used alone and unrivalled for three hundred years, is due to the fact that during those years the Greeks were a young people occupied in settling their own questions, and always confronted by the fear of the unknown peoples, the unknown nations—the *Barbaroi.* After the Persian wars, when the East had ceased to be a menace, and become an invitation, they were eager enough to seize upon and develop Eastern art motives. No fear of losing the national characteristics of their art restrained them from adopting and developing for their own use the Ionic capital—now universally recognized as of Asiatic origin—or the

dentils of Lydia, or recombining the lotus and palm leaf forms into new elements of beauty. For all the Greeks were eager always, as is truly said in the Book of the Acts, "either to tell or to hear some new thing;" and equally eager to adopt whatever pleased them and develop it in their own way.

Greek architecture, then, which is held up as a pure national style, sincere and worthy of our emulation, is seen on analysis to be a development of motives coming from many non-Greek sources, with a few native Greek motives, all combined and used in harmony with Greek life, Greek materials, Greek religion, and that overmastering artistic idealism which has made Greek art what it is. The Greek never hesitated to take the results of other peoples' development; he borrowed in his religion, he borrowed in his philosophy, he borrowed in his art. He modified what he borrowed not because of any dogmatic desire to make his art a national art, but because he could always make his borrowed motives more beautiful by modification.

The history of Roman architecture reveals the same underlying method of development. The Romans came into contact with Greek civili-

zation early in their career because of the Greek colonies in Italy and Sicily and Greek commerce, which flourished at that time, as the quantities of Greek vases and imitations of them that are found in Italy testify. Furthermore, like the Hellenes, the Romans were a people who were occupied in their first few hundred years as a nation by their own affairs, in wars, and in social and political development. Even in their earlier times, however, the Romans were builders, and long before their final architectural development they had acquired no small skill in building itself, in arch making, and in the efficient use of their native materials. And the Romans were an art-loving people, keenly sensitive to beauty. The rapidity with which they assimilated Greek forms, after years of provincialism, bears witness to that.

Consequently, when at last internal peace and growing wealth brought them the opportunity to develop their fine arts, they turned for inspiration to the most beautiful buildings they knew—the Greek buildings, and adopted for their own use the Greek forms they were wise enough to love. These they combined with their own forms and the closely allied Etruscan

forms, and out of this combination, by means of their building skill, evolved their own wonderful Roman architecture, with all its magnificent qualities of bigness and large conception and careful planning and rich ornament, a combination of qualities before unknown.

This is not the place to go far into the criticism of the much misunderstood Roman architecture. Causes and methods of development alone concern us here. That the result—Roman imperial architecture—was a strong and virile art, intensely expressive of every side of that wonderful empire—is universally admitted. The critics who too strongly attack Roman taste and Roman buildings are not—most of them—architects; they are mere followers in the tradition of attack on everything connected with the Roman Empire—a tradition started by a Roman himself—that supreme Tory and reactionary, Tacitus.

One more example of a more recent development of architectural style will suffice. When Charles VIII, and later Louis XII and Francis I, made their ill-fated expeditions into Italy to lay claim to the thrones of Naples and Milan, though they brought back no spoils of material

conquest, they did bring with them into France a tremendous and enthusiastic admiration for the artistic products of the early Italian Renaissance, which was just in the first flush of its exuberant beauty. They brought back, too, Italian artisans whose work was eagerly welcomed by the French courtiers. But unlike ancient Greece and Rome, when this new and beautiful art came to their notice, the French already had a magnificent and live and growing national architecture of their own. The flamboyant Gothic of the Fifteenth Century France was too dear to French hearts to yield to a new style at once; too deeply filled with the French spirit to be deserted for a foreign art without a struggle.

And yet the grace and loveliness of the newly discovered Italian decorative work appealed irresistibly to these French courtiers, and particularly to Francis I. His political aspirations in Italy may have had something to do with his enthusiasm for Italian things; besides, an Italian city at this period was a far more orderly and civilized place than the usual French city, and the Italian Renaissance palaces far richer and far more comfortable than the contemporary French châteaux. Whatever the cause—po-

litical or social or æsthetic, and probably it was a combination of the three—Francis I at once set about building in the new style. He imported large numbers of Italian artists, and treated them royally, and naturally enough his admirers and courtiers strove to imitate him as far as they were able.

Of course, no absolute reproduction of Italian models was possible. In the first place, the great guild of native stone cutters and master builders, all bred in the tradition of flamboyant Gothic, was all-powerful, and it was but slowly that they came to know well and use correctly the Renaissance detail, and it was years before they came to adopt the style in anything beyond detail—years during which the whole spirit of humanism and individualism, of which Renaissance architecture was but one side, was making great strides in France. France has always been a rapidly changing country, given to idealistic enthusiasms, and in the years from the death of Louis XI to the time of Henry IV, it grew rapidly in homogeneity, in national spirit, and in international trade and liberal culture. Had this change not taken place, the Renaissance in architecture would

doubtless have been but a momentary florescence, a mere fad, to die with French political aspirations in Italy, and the French would have continued for years and centuries longer to build according to the Gothic traditions of their building guilds.

But French growth did not allow this. International communication was growing rapidly in amount, travel was becoming more common, humanistic culture was more and more spreading over Europe, bringing with it a tremendous admiration for classic accomplishment; so that the delicate and lovely mixture of classic and Gothic elements which is the style of Francis I, and which is so full of the charm peculiar to all transitional styles, like the charm of Spring in April, died not into a recrudescence of Gothic, but into a fuller appreciation of classic forms, and a firmer touch and a finer skill in their use. Even with the growing use of classical forms, however, there was, in general, but little approach to those forms of Italian architecture which were the first inspiration of the French Renaissance. Climatic requirements are the most important reason for this; the necessity in cloudy France for large windows and steep

roofs.* In addition, there was a certain constitutional gaiety and exuberance of spirit in the French people that found in cold classicism but an imperfect expression.

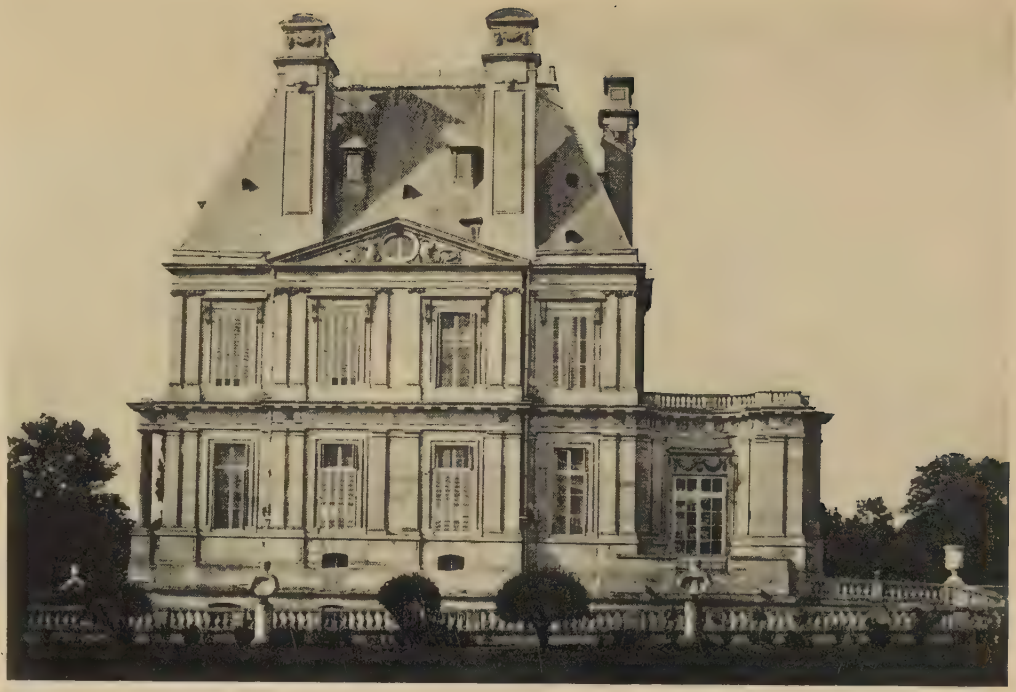
It was the result of all these tendencies which made French Renaissance architecture the strongly national style it is. There is always a frank use of large windows; there is nearly always a steep and well-developed roof: there is always the same expression of the intellectual classicism and the exuberant unrestraint as well. French architecture of the seventeenth century was a national style not because the French did not copy for fear of denationalizing their art, but because their artists were true to their ideals, copying what they thought beautiful, but building always in conformity to their conditions, their materials, and their environment.

An analysis of the development of any other historical "style" will reveal the same influences at work. It will reveal, for instance, Romanesque growing out of Roman and Byzantine architecture, and Gothic out of Romanesque, not through any sudden revolution, not

* See the Plate opposite page 284, and compare it with the Plate opposite page 158.

through any impetuous striving for originality, but always through the mere efforts of the architects and builders to build as best they could under differing conditions of skill and the differing social make-up of civilization. In every case architects have copied past forms and foreign forms as well as they could, when these forms seemed beautiful, and in every case, nevertheless, architectural styles grew up inevitably national, inevitably expressive of the contemporary life.

Any true criticism of the spirit of present-day American architecture must be based on a similar analysis of the conditions, both past and present, which have influenced the broad streams of our national life and character. And first of all, one must note a certain cosmopolitan quality in American life. At its birth the United States was but an unintegrated collection of separate states, whose inhabitants were of differing social classes, from differing parts of England, with differing educations and ideals and culture. Furthermore, there was added a strong French influence from Canada, and later, directly from France, due to French sympathy for the young country which had just revolted from its hereditary enemy, England. Indeed,



CHÂTEAU OF MAISONS LAFITTE, FRANCE

A typical French Renaissance palace. Contrast this with Plate opposite page 158, the Riccardi Palace, and notice how the colder and cloudier weather of France has affected the design, producing large chimneys, steep roofs, and large windows.

it was not until years after the Civil War that the country had any true national consciousness, and to this day local loyalties and local consciousness persist in all parts of the United States which make any centralized, narrowly intellectual attitude impossible. Local provincialism has preserved us to a large extent from the dangers of national provincialism.

Furthermore, it must be remembered that this continent was settled largely by people coming from a country that had a strongly developed architecture of its own, and that throughout those years when Inigo Jones, Christopher Wren and their followers were building the masterpieces of English Renaissance, communication between England and the American colonies was well nigh continuous. The English colonists, therefore, as soon as they were able to build, built as nearly as possible in the style of the English Renaissance of their own time. True, they modified details here and there, because they were compelled to work so largely in wood, instead of brick and stone, but there was no architecture at all among the aboriginal Indians which they could adopt, and which might thus change their style.

After the Revolution there was little attempt

to modify this style in order to give it a national significance. Even President Washington, enthusiastic American that he was, had no such ideal of a national style in his mind. He had a Frenchman, Major L'Enfant, lay out Washington in accordance with the best European taste and skill of the day; and the oldest portion of the present national Capitol is of a severely classic type quite in harmony with the contemporary tradition both of France and England. A little later Thomas Jefferson—a man of amazingly broad knowledge, wide culture, and of no little artistic skill—laid still another foundation stone for the tradition of American classicism. It has been definitely established that this great gentleman was himself the architect of the University of Virginia at Charlottesville, and of the original state Capitol at Richmond; the latter being built from designs which he made as modifications of the drawings originally made for the building by a French architect or draughtsman, in Paris, under his own direction. It is interesting to see how in all his work, Thomas Jefferson was striving in wood to imitate, or simulate, the glories of Roman architecture, and Italian Renais-

sance architecture, known to him principally by means of architectural books, particularly the great work of Palladio. In other words, one of the earliest of real American architects, who was a much-travelled gentleman, and president of the United States as well, deliberately strove in all his work to imitate the beauties of a past style which he knew and appreciated because it seemed to him beautiful. It is little wonder that the classical tradition so founded in this country has never entirely perished.

The whole trend of American architecture was thus at its commencement given a turn in the direction of a classicism similar to the classicism of the Roman revival and the later Greek revival in Europe. Similarly, the Gothic revival in England had its reflection in this country; producing some beautiful churches, such as old Trinity, in New York City; but producing a great deal that seems to us very unbeautiful; because Gothic detail is so utterly unsuited to the sort of wooden building that was commonly built at that time. American architecture throughout the period of the Civil War and the period of reconstruction was a dreary waste; all the energy of the country seems to have been

absorbed, first by the terrible strain of the war, and afterwards by the sudden industrial and commercial development which followed. During all this time, however, there was a continuously increasing flow of trade and culture to and from Europe.

The last quarter of the Nineteenth Century was remarkable for a sudden awakening of artistic taste that permeated the whole country, and modern American architecture, as distinct from that American architecture which grew directly from the tradition of Thomas Jefferson and the earlier Colonial builders, may be said to date only from about 1875 or '76, the year of the Centennial Exposition in Philadelphia. But this same quarter century was also remarkable for two other important features; first, an enormous influx of foreign immigrants from every country in Europe, and second, an unprecedented amount of European travel, on the part of an ever-increasing number of Americans. In addition, it must be remembered that the thought of the closing years of the Nineteenth Century and the first years of the Twentieth Century was dominated by a strongly international cast. International congresses of all

kinds grew more and more common; international finance became important; lasting international peace seemed a possibility, and almost a probability. In other words, the forty years which have seen the development of modern American architecture have been years during which the international ideal grew and triumphed.

The effect of this internationalism upon our American art can be readily realized. It has made our artists, and especially our architects, eager to welcome inspiration from any quarter, especially since in the 1870's American art had reached such a low ebb and inspiration was so totally lacking. In other words, just at the period when the awakening artistic taste of America was groping vaguely for beauty, Europe, with all its stores of art treasures new and old, modern and ancient, lay especially open to Americans; European art schools welcomed American students, and European resorts welcomed American tourists. Naturally, therefore, it was from Europe that the American architects drew their inspiration, from the thermæ of Rome, the palaces of Florence and Venice, the châteaux and cathedrals of France, the

abbeys and manors and country villages of England. In drawing inspiration from these channels, and in adopting forms developed in Europe, our architects committed no artistic sin; they were merely following the same methods that the architects of all the greatest ages have followed. Beauty is an architect's aim and beauty is a quality that knows neither race nor nation. The Cretan copied Egypt, the Hellene copied the Cretan, the Roman copied the Greek, the Renaissance copied the Roman, the modern architect copies them all. Greatness or badness in architecture depend not on the question of originality as against copying, but upon the success or failure of an architect to build beautifully, to solve some concrete problem in harmony with conditions, with materials, and with the ideals of contemporary culture.

Our architects must, therefore, adopt the forms of past styles for our own use, as long as our American civilization is what it is today. Our architecture must be based on the architecture of the past as long as our culture is based on the culture of the past, and the forms that the architects copy and adopt will inevitably be forms developed by those people on

whose achievements our culture is based. Just as every great national architecture has arisen through years of slow development, never blinding itself to the past, yet never losing in reverence for the past the call of new problems and new human needs to be met, so must American architecture arise; so it is arising before our eyes. Our architects are not using Roman orders or Gothic arches because they are too inefficient to design new forms; but because the forms they adopt are beautiful, and have been so judged for centuries. With our history and our make-up we can rightly claim any of the European styles as our own, because we are able to understand it. More than any other country of the world to-day, the United States is heir to all styles, and all cultures, and just as Greek philosophy and Roman law, and Feudalism, and Renaissance individualism, and the rationalism of the Eighteenth Century have all contributed to our institutions—our law, our education, our religion, our political economy—so our architecture must needs be based on the architecture that all these different peoples have developed.

Nor is the case of modern America analagous

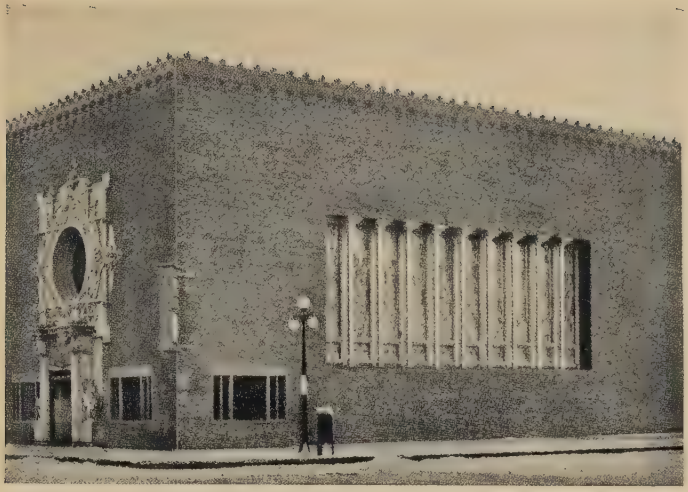
to the case of modern Germany, or Austria, or England, where separate and modern national styles seem to have suddenly developed during the last twenty years, for in all these European countries nationalism, perhaps even chauvinism, has been far more deeply cultivated, and has attained a far more luxuriant growth than would be possible in this country. Naturally enough, this great development of national feeling—one of the most outstanding facts of recent European history—has, like all great and deeply felt spiritual movements, been expressed in architecture, and the particular trend that this nationalistic thought has taken can in every case be read plain in the architecture of the countries under consideration. Furthermore, those critics of our modern American architectural traditionalism who find in these new national styles of Europe examples for us to emulate, lose sight of another important fact, the fact that upon analysis these new nationalistic styles lose much of their novelty; in every case their elements are much the same as similar elements in styles of the past. For example, the modern Teuton development in architecture is, perhaps, the best known of the modern

styles, with a splendid list of works to its credit; fine stores, and houses, noble town halls, and great monuments; all apparently designed in an absolutely new and original way. When one examines them in detail, however, it is astounding how exactly similar they are in many ways to certain buildings of the German Baroque; similar in a love for long, vertical lines, similar in the use of roof surfaces, similar in the general feeling for relief. The Plate opposite page 294 shows a little hunting lodge which is exactly analogous to a great deal of the work of the modern German *Secession*—in reality it was built early in the Eighteenth Century by a famous Baroque architect, Johann Conrad Schlaun.

Similarly, the majority of the modern architecture of France is an eclectic style that combines elements of almost all the French "styles" from Francis I to Louis XVI and the Empire. France is fortunate in having the great tradition of the École des Beaux Arts to keep always alive in the student the ideals of the architecture of its great past; and *Art Nouveau* had but a short existence as a controlling factor in French architecture. In a

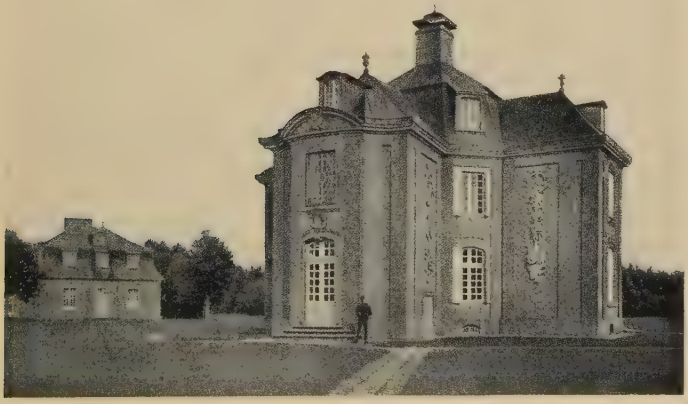
similar manner, the best modern English architecture is in a style which combines elements from all the English styles, and especially from Tudor work, and the earlier English Renaissance.

America, to-day, is too young to have any national styles of her own to draw on, save only the Colonial—a modified form of the later English classic, and to a less extent the Spanish Renaissance. Our architects deserve a great deal of credit for the way in which they are making an ever-wider use of these two styles. Examples of good modern buildings in an adaptation of the Colonial styles are so common throughout the East that specific illustration seems almost futile. There is something about the style that makes it peculiarly well adapted to the great elms and wide streets that are the pride of the smaller eastern towns and cities, particularly when it is used in a town where there are many old houses and churches, and a wealth of local tradition. Less known, but even more interesting, are the increasingly numerous buildings in California and the Southwest in which an attempt has been made to adapt the decorative motives of the Spanish Renaissance, as it was built in Amer-



MERCHANTS NATIONAL BANK, GRINNELL, IOWA

A building which is the result of one man's temperament, undisciplined by tradition. Such a building almost always appears somewhat "outlandish."



HUNTING LODGE, CLEMENSWERTH, GERMANY

This lodge, built in the eighteenth century, shows that modern German "Secession" architects are merely maintaining traditions of long standing. See page 293.

ica—the "Mission" style—to modern uses. There are a number of beautiful houses in California which are entirely successful in this adaptation of a beautiful style which has been so travestied and caricatured by cheap builders in the Middle West and East as to have fallen into considerable disfavour. That the style may be used successfully for large public buildings, too, is proved by the the railroad station at San Diego. At their best, however, these styles are not sufficiently wide in their possibilities to fill all our physical and æsthetic needs and there are great portions of the country where climatic or historical factors make both seem out of place.

There is but one other possible source of purely American inspiration. Some of the Indian tribes far in the southwest, in Mexico and Central America, had developed long ago building forms of some beauty and magnificence. This grotesque art, however, born of priest-ruled, barbaric peoples, who worshipped terrible gods with human sacrifices, is far too alien to our taste ever to appear beautiful, and any attempt to adapt it to our use is manifestly absurd.

But in general, the architect should forget

"style" altogether. The architect who seeks a new and original American "style" is as much at fault as he who sticks to Roman or Gothic at all costs; his work may be interesting, it may be significant, but often it is less in touch with peoples' needs, less truly beautiful, than saner and less imaginative work.* Whatever our attitude on the style question may be, whether it be conservatism, like that of Christopher Wren, who wrote over two hundred years ago, "It is necessary for the architect in a conspicuous work to preserve his undertaking from general censure, and so for him to accommodate his designs to the *Geist* of the age he lives in, though it appear to him less rational"; or whether it be, on the other hand, the radicalism of the critic who wishes that every architectural book and photograph in the country might be destroyed so that we might start anew—whatever our attitude may be, we think altogether too much about "style."

For one may rest assured that style is but a means, and that beauty is the end in quest. Let our architects, then, and our laymen, too, stop all their futile arguments about style, about *Art Nouveau* or *Seccessionism,* or the good

* See the Plate opposite page 294.

old traditions, or the Roman or the Gothic; for the truest way to a national style is through a sincere attempt to gain beauty in a simple way, and the architect who designs carefully and thoughtfully, taking care to fulfill every smallest demand which his problem makes, and decorates the result in the most beautiful way at his command, whether the decorative motives he uses are created by him or adapted from the past, is doing more to make American architecture a glorious expression of national life than generations of theorizing critics.

CHAPTER IX

THE SOCIAL VALUE OF ARCHITECTURE

One of the most important movements in the entire field of modern thought has been the "socialization of consciousness"; that is, a gradual widening in the scope of popular thought, which has been reflected in every kind of human endeavour. The individual is growing less and less satisfied with the consideration merely of the things that concern him alone, more and more he is coming to feel himself consciously a part of the fascinating and complex tissue of life; he is beginning to appreciate that his life is so closely bound up with the lives of his fellows, and their lives knit by such a multiplicity of ties to his, that he must settle all really important questions not by their effect on himself alone, but by their effect on the total life of the community. The Mediæval or Renaissance moralist began with the individual soul, and worked from that to the ideal community; the modernist, on the other hand, starts with

the ideal community and works back to the individual soul.

This new attitude has furnished the world with an entirely new set of criteria by which to judge not only personal conduct, but also the religion and the arts of the present day, and this judgment is going on continuously and with a ruthless earnestness. Architecture must stand or fall in popular estimation according to the manner in which it undergoes this judgment, and by some it is condemned, for in villa or great church, in library or city house, some critics see only the working of the traditional and outgrown individualism, and in the architect they see nothing but a panderer to the false culture of a pleasure-loving plutocracy. The critics who condemn our architecture in this way are judging the whole art by a few individual architects. It is true that there are certain architects who may be so judged and so condemned; but the art itself is greater than any of those who practise it, and the great majority of American architects are more truly alive to the social bearing of their profession, and its unique social value, than are most of their critics.

Architecture is, in fact, the greatest and most real of all the arts, precisely because it has this unique social message, this tremendous social value. And this is necessarily so, because of the very nature of the art itself; because of its dual nature, its double basis on practical needs and æsthetic ideals. Every real change in popular sentiment will inevitably react on both these factors, and through them on architecture, for every real change in popular sentiment, when once it permeates the core of community life, must produce changes in the daily needs of the people, just as surely as it must modify to some extent the popular concept of beauty.

This is particularly true when the change is one so deep in its penetration into the very heart of life, and so wide in its scope, as the present change, which must affect everything one does or thinks; a change which has produced socialism and settlement houses, model suburbs and public playgrounds. The socialized conscience, for instance, has produced new ideals of housing, of sanitation, of factory arrangement, of city planning, and all of these have a direct bearing upon the art of architecture, because they present new problems in the

buildings which the architect is called upon to design.

In the main, modern architects appreciate and welcome these new problems. It is not upon them that the blame must be laid for the slow realization of the social ideal in modern buildings. They are ever alert to the changing needs of the public; housing competitions and the like are frequent, and architectural thought is eagerly assailing these new problems, and eagerly creating new ideals to realize. But, unlike painter or sculptor or writer, the architect needs more than his own thought and his own skill to create works of art. The architect's mission is not fulfilled by dreams or great schemes, it is only fulfilled by actual buildings, constructed and in use. And to embody the ideas which he has developed requires often a large amount of money. It requires people to build, people who are ready to appreciate the merits of new schemes and to pay for them. As long as speculative builders and real estate operators are content to build cheap and ill-designed buildings because there is great profit in this evil trade, just so long, no matter how hard the architect thinks about new ideals, and

no matter how perfect are the solutions his brain devises for the new problems, will the social ideal be thwarted in architecture, and our cities remain chaotic, unbeautiful, depressing monuments of an inexcusable avarice. Good design costs; high ideals must be paid for; and until people are educated beyond the wild and thoughtless rush for abnormal dividends at any cost of beauty and health, it is discouragingly futile to hope for great improvements. If our architecture is to be blamed for not realizing the immense importance of socialized effort at the present day, the blame must rest not upon the architect, but upon that small minority who are determined to build as cheaply and as thoughtlessly as the law allows, because there is easy wealth for them in the process.

It is significant in this matter that one of the first to realize in an agony of spirit the terrible injustice and ruthless cruelty of the new individualistic industrialism was also one of the best known of architectural critics, John Ruskin. In a lecture before the Royal Institute of British Architects, after an interesting discussion of architectural education, occurs this passage: "Pardon me that I speak despondingly. For

my part, I feel the force of mechanism and the fury of avaricious commerce to be at present so irresistible that I have seceded from the study not only of architecture, but nearly of all art; and have given myself as I would in a besieged city, to seek the best modes of getting bread and water for the multitudes, there remaining no question, it seems to me, of other than such grave business for the time."

Ruskin saw architecture one-sidedly; to his acute insight and powerful ethical sense, there was, therefore, little place in life for the architect; poverty and misery were calling too poignantly for relief on all sides. But to Ruskin architecture meant decoration and ornament, and the architect was primarily a decorator, and it is this misconception which gives such a sad and discouraged tone to this passage. To the modern architect, who realizes that decoration is but one of several sides of his great art, the call of poverty and misery is only an inspiration to a more careful exercise of his skill, and a more absolute devotion to his profession.

The first great value which the art of architecture has for the commonwealth lies in

the fact that true architecture is entirely devoted to the sincere attempt to solve in the best practical way possible all the various problems set before it by every building which it is to design. The implications of this are extremely far reaching. Not only does the individual architect, by the careful design of each building, thus improve the conditions under which the users of the building live, or work, as the case may be, but in addition, the gradually growing number of such carefully designed buildings raises the entire standard of taste in the nation, slowly, it is true, but irresistibly.

The modern school house is a concrete example of how architecture supplies the practical necessities engendered by the new social conscience, and at the same time raises the standard of public taste. The ordinary city school house of thirty years ago was, as a general rule, an unbeautiful, unhealthy affair, with close, unventilated rooms, dark corridors, and dangerous wooden stairs; a gloomy place of brick outside and coarse wooden trim in, where the children were herded together in a most unhealthy and uninspiring way. Since that time awakening social consciousness allows no more such

blots on our streets; public opinion will no longer stand school houses which are not light and well ventilated and safe. The modern school house is airy and conveniently arranged, and often the most carefully thought out building in the community. For this state of things the architect is directly responsible. Even before public opinion had awakened to the horrors of dirty and dangerous schools, the architect had devoted a great deal of thought to the problem, as many of the older schools, when designed by good architects, testify. The true architect is never content with following the minimum requirements of the law, as the mere builder is too often content. The true architect is always puzzling over his problems, and applying all his expert knowledge and skill to producing buildings that shall not only satisfy public taste, but, as nearly as possible, shall embody the high ideal of the building that exists in his own mind. If his building does not far surpass the minimum requirements of the law and of popular opinion, in convenience, in efficiency, in sanitation, in beauty, and in safety, the architect feels that he has failed. The mental result is the raising of the taste of the community to

a new level; for good things which the public has once enjoyed, it is very loathe to part with. The material result, also, is immeasurable. New York City's newer schools are a wonderful civic possession, and so are the schools in a thousand different towns and cities, all because in them architects have striven to do their work sincerely and well. Particularly in California has the school architecture risen to a high level of public service, because there the community conscience seems to have been developed to an unusual degree, and bcause economic conditions and the moderate climate have given the architect a greater freedom to build according to his ideals. If education is the great hope of progressive democracy, surely in building the many-windowed and efficient schools of New York or St. Louis, or the invitingly delightful, wide-spreading, one-storied schools of California, American architects have performed a conspicuous public service, and architecture has been truly the expression of the awakening social conscience of the nation.

During the last twenty years there has been an even greater improvement in housing conditions, for which the architect is responsible.

We are in the habit of thinking of our city slums as rather terrible places even now; but if we could picture them as they were thirty years ago, we should realize what progress has been made in bettering the living conditions of the poor. It is true that architects are not responsible for all the improvements, but it is equally true that architecture has not lagged behind. And for very many improvements architecture is directly responsible. The "open-stair" tenement, one of the greatest steps forward in tenement design, in which all interior public corridors are abandoned; the careful arrangement of tenement units so as to give well-ventilated light courts that are real courts, airy and capacious and pleasant, and the gradual reclamation of the waste roofs; all these are changes which architects have initiated. These are real reforms, and it is only the tremendous increase in population among the least educated people which makes it possible still to fill the terrible old "dumb-bell" flats, with their dark and dreary rooms, their six-story air shafts, two or three feet wide, and their indecent and dirty sanitary arrangements. Before these, again, were the utterly terrible holes in which the poor

of the early Nineteenth Century had to live; holes the like of which one may conceive from the labyrinthine alleys of parts of Liverpool or Naples or eastern London, vast areas of unplanned hovels and unkempt courts, black, fearfully unhealthy, without adequate water, without any attempt at sanitation, reeking hotbeds of disease and vice and despair, into which were crowded all the unfortunate castaways of commercial individualism.

Now that misery, at least, has gone, or is fast passing. Many of the European cities have made enormous strides in recent years in doing away with the unspeakable conditions under which their poor lived. In this fine work Germany and England are in the lead, and city after city has condemned wholesale great blocks of unsanitary courts and alleys, and replaced them with new and better houses. The statistics are amazing. Between 1875 and 1908, for instance, the city of London condemned and cleared one hundred and four acres of fearful slums, Birmingham ninety-three acres, Leeds seventy-five, Glasgow eighty-eight, and so forth. Our cities have much to learn from European cities in this respect; in Europe civic consciousness is so

alive and civic pride so alert that improvements are possible that stagger us. And these improvements are largely due to the architects. It is architecture that must arrange for the housing of all the people rendered homeless by the condemnation of their hovels; it is architecture which must design new tenements which shall not only satisfy but transcend the most stringent requirements of the law.

If, as it appears, our people and our civic governments here in America have been behind the times and timid in their treatment of the housing needs of our cities, our architects—and by architects is meant not merely building designers, but men who live up to the noble traditions and the high responsibilities of their art—cannot be likewise blamed, for where they have had opportunities to build tenements, they have produced buildings which will bear comparison with any in Europe in sanitation, in convenience, in beauty, and in economy. Indeed, in some ways they have set a standard that far surpasses the European standard; as, for instance, in the matter of bathrooms. New York in 1904 had the terrible total of three hundred and sixty-two thousand dark interior rooms;

but New York now has probably a larger number of bathrooms than any other city in the world, and bathrooms whose average convenience and cleanliness are a wonder to foreigners. A great deal of the progress which our housing laws have made is attributable to architecture, too. The public opinion of the architectural profession is very powerful, and organized as it is in architectural societies all over the country, it has no little influence over legislation. Every architectural society has committees which devote a great deal of time to legislative matters; which examine every law proposed that can have any bearing whatsoever upon building; which are always discussing sanitation and fire prevention and building codes, and by means of public agitation and education striving always to raise building standards in this country in every respect, both as regards safety and beauty.

If architecture has been successful in bettering living conditions in modern cities, it has been even more so in the suburbs. Here, again, Germany and England have taken the lead, so that the contrast between the carelessly planned and poorly built suburbs of the first half

of the century and the model houses that have been built during the last ten years is very striking. There is nothing much more depressing, for instance, than the average English suburb of fifty years ago, street after street exactly alike, lined with ugly houses—"semi-detached villas"—each of dirty, blackened brick, without distinction, utterly undesigned, and brooded over always by tiers of great factory stacks, gaunt and stark against a grey sky, stacks that belch endlessly torrents of black smoke which the wind smudges across the clouds. Such a suburb is as dreary, as uninteresting, as cursed with colourless anæmia, as the flat, stale life it produces. It is dull with a cruel and despairing hopelessness. Such suburbs one may see still from the car windows as the train rushes through the ragged skirts of southern London, or through the busy black country of the Midlands, or through certain towns in our own New England or Pennsylvania. The new model suburbs of Germany and England are as famous for their excellence as the old suburbs are notorious for their squalor, and a visit to the Hampstead Garden Suburb near London or to the Krupp villages near Essen is a revelation to

many an American. It is noteworthy that architects have designed these new and beautiful villages, and that it is to architecture that is due to a large extent the improvement in suburban housing. Lately, this country has begun to awaken to the sordidness of our American suburbs, and manufacturers have begun to build on their own account new and pleasant villages for their employees, realizing that in improved living conditions lie advantages not only for the employee, but for the employer as well.

There are a thousand symptoms that architects have not been blind to the opportunities presented their art in this respect. The improved housing now being built in Washington as a memorial to the late Mrs. Wilson from designs that were the product of a housing competition is but one of many schemes which show that architectural thought is at last bearing fruit in executed work, and that there has been a real beginning in making our cities and their suburbs comfortable and safe and healthy, even for the very poor—a beginning that is bound to grow more and more quickly and bear ever more fruit which shall be increasingly valuable to the life of the commonwealth.

Nor are convenience and the filling of obvious practical needs the only social services which architecture performs. The dual idealism which the architect should always possess, which makes him alert to practical requirements, and at the same time always avid of beauty, prevents him from ever being satisfied with merely crudely necessary results, however perfectly convenient. The true architect, like every true artist, sees life in a manner too broad and too keen to allow that. He sees life as a matter of ideals as well as of bread and butter; he is always alert to the large place which beauty must have in making any life rich and full. He realizes how a starved yearning for beauty is twisted and perverted to find unhealthy expression in all sorts of vice and crime. He realizes concretely that a passionate need for beauty is innate in the very tissue of every life, and that it is a real need, coextensive with the need for health and life itself, and as definitely requiring satisfaction to produce a sane and happy commonwealth.

The tragedy of the slum lies almost as much in its ugliness as in its crowded and unhealthy conditions. In fact, the two qualities are in-

separably connected. The gaunt and terrible ugliness of the typical American manufacturing town sheds perpetually a subtle, baneful influence, all the more dangerous because so impalpable, upon the life of that town, adding always to class hatreds, piling always inflammable fuel on the hot fires of envy and greed and rebellion; an influence more potent than is usually realized in arousing the angry heart of strife, in turning boys to drink and drugs, in speeding girls into the life where a flashy and temporary luxury burns with a false beauty and attractiveness for a brief span and dies into an unutterably terrible tragedy of disease and disillusion and death. Could we but substitute for the raw wildness of a western mining town or the slipshod squalor of the ordinary factory centre in the East some semblance of order and beauty, the results in an increased orderliness and sanity of popular life would be amazing.

Experience has shown that this is no idle and baseless assertion. It is the ever-increasing movement in Germany to surround the employees of the great industrial firms with beauty which is responsible in no small degree for the industrial and national solidarity of the Ger-

man people so evident to-day. It is the fact that the poor of the older continental cities of Europe, however miserable, live in the midst of a beauty which is the legacy of the architecture of all the past, that has enabled them to live a life in many ways richer, fuller and more spiritual than the common life of their much more prosperous American co-workers. The emotional effect of beautiful buildings, however unconsciously felt, is never lost, and a civic consciousness truly alert must feel the need of beauty as strongly as it is cognizant of the need for health.

And if one beautiful building has an important effect upon those who see it, how much more powerful is the effect of a city of beautiful buildings! The architectural perfection of Athens under Pericles was not only a symptom, it was, as well, a cause of the well-ordered and happy life of the Athenian commonwealth. So the beauty and imposing grandeur of Rome under Trajan and Hadrian were not only a symptom, but a cause of the gradual breakdown of the Tory aristocracy of the Republic and the early Empire, and the gradual acquisition by the whole people—save the slaves—of civic rights

and an intellectual and artistic culture, as evidenced by the little town of Pompeii, for example, a condition which alone made possible, after centuries of racial struggle and political disintegration, what culture there was during the Dark Ages, and which laid a foundation that, growing through the Middle Ages, carefully nourished in the monasteries, blossomed with such beauty in the Renaissance, and produced so infinitely much valuable to us in every side of human activity.

The great age of Gothic architecture was equally a symptom and equally a cause of the religious sentiment of the Thirteenth Century; more than that, the great cathedrals of France became the rallying places of the people, and thus helped the solidifying of popular sentiment against the feudal barons. In the gradual growth of cities around these great churches, cities nestling as close as possible to their tall, grey, many-buttressed sides, can be seen in some small measure the inspiration which the people drew then, and still draw, from the beautiful might of their great architecture.

It is more difficult to trace the effect of beauty upon us moderns. Our lives are more complex,

our spirits less naïve, more skeptical, less ready to yield to the stimulus of beautiful art. It is especially difficult to realize the social effect of beauty here in America, for the puritanism under the spell of whose austerity large portions of this country were settled has left traces of itself even now; traces in whose influences are strangely commingled good and evil—sane thought and unhealthy repression, a stern moral sense and an unreasoning suspicion of all that is beautiful. But it would be an utter falsehood to deny the effect of beautiful surroundings on our people. The study of psychology has established the close connection between æsthetic pleasure and certain signs of mental and moral health. To cite a simple case, in the mere eye rest and repose which a simple and beautiful building furnishes, there is a distinct source of true health and happiness, and a distinct influence towards the thinking of sane and beautiful thoughts.

One may well rest assured, therefore, that architecture is performing a noble public service in creating beautiful buildings as well as in making them well built and convenient. There is too much evidence in the history of the past,

in the life around us, in psychological inquiry, for anyone to deny that, and it is a fact which the greatest and most far-seeing people have always appreciated and accepted. Beauty, then, has a two-fold, beneficent effect, first physical, then spiritual; first as a means of sane pleasure to the senses, second as an inspiration to higher thinking and better living. Ruskin—moralist that he was—saw the spiritual effect of beauty as supreme; we are, perhaps, given too much to a consideration merely of its physical side. At the conclusion of the lecture from which was taken the quotation given on page 302, there occurs this beautiful passage, which all of us might do well to take to heart. "But there is, at least, this ground for courage, if not for hope. As the evil spirits of avarice and luxury are directly contrary to art, so, also, art is directly contrary to them; and according to its force, expulsive of them and medicinal against them. . . . In the fulfillment of such function, literally and practically, here among men, is the only real use or pride of noble architecture, and on its acceptance or surrender of that function it depends whether, in future, the cities of England melt into a ruin more confused and ghastly

than ever storm wasted or wolf inhabited, or purge and exalt themselves into true habitations of men, whose walls shall be Safety, and whose gates shall be Praise."

There is a third great service which architecture performs for the commonwealth, the inestimable service of "town planning." Architecture has never been satisfied with designing single buildings. Wherever great cities have grown, there the architect has striven not only to fill them with beautiful buildings, but to arrange them in the best possible manner, and so, little by little, to produce cities whose design shall be the expression, not of chance, but of art. Thus the imperial Cæsars built in Rome forum after forum, straightened roads, widened and lengthened streets. Thus, centuries later, Henry the Fourth built in Paris the Place Royal, setting an example which many of his successors followed in making breathing spaces and spots of real beauty in the capital. After the London fire in 1666, Sir Christopher Wren prepared a great plan for the rearrangement of the burned portion, with fine wide streets and dignified spaces—a plan, unfortunately, never followed.

Slightly different was the example of Cardinal Richelieu, who, in the first half of the Seventeenth Century, had his architect, Lemercier, design an entire village for him, to be built in connection with his château—a village which, though never finished, exists as one of the earliest examples of comprehensive town planning. His was an example too autocratic and requiring too much of enormous wealth and power to result in emulation, but it indicates the tendency always present to progress from the building and designing of single buildings to the designing of entire groups.

Our own country has an early example of town planning starting from a different point of view, in Washington, which was first laid out from the plans of Major L'Enfant, an accomplished Frenchman. General Washington was far-sighted enough to realize almost alone at this early time the enormous benefit of having the national capital carefully and thoughtfully planned, and he was fortunate enough to have a Frenchman to develop the design, for the French have always had a superlative skill in the solution of such problems, in the placing of important buildings, and the values

of vistas and variety. It is this French skill which has made Paris the most beautiful of all capitals; each great monarch, and each successive governmental regime, striving through its architects to make successive improvements, laying out new streets, building dignified *Places,* setting beautiful buildings always in the most effective situations. The new boulevards, the tremendous and exquisite vistas, like that up from the Place de la Concorde to the Madeleine, or up the Champs Élysées to the Arc de Triomphe, the treatment of the great Chambre des Députés, or the Trocadéro, these elements of high and inspiring beauty can be the results of nothing save dauntless architectural skill and superb architectural taste backed by great and sympathetic power; and it is this French skill and taste which has influenced the beautification of countless European cities, from Berlin to Bucharest.

City planning—that is, the mere fact of city planning—is, therefore, no new thing; but city planning as a science, with all the implications which it has to-day, is. The city beautifiers of the Renaissance, and later, even through the first three-quarters of the Nineteenth Century,

had in mind mainly beauty and dignity. There was a great deal of personal pride, perhaps even of personal vanity, in the improvements made in capital cities by the sovereigns reigning there. These improvements were more individual than civic movements, and, however beautiful their results now, they were often at the time indirect results of terrible cruelty and oppression, and attended with all sorts of scandal. The building of the Place de la Concorde, for instance, was probably set down as but one more of the extravagances of the Louis by the Revolutionists; they thought more of the terrible taxation that had made it possible than of the blessing it is to the modern city. The city planner of those days was seeking beauty at any cost.

It is the fact that large numbers of Americans confuse this early city planning with the ideals of modern city planning which makes them so sceptical of its benefits, and so suspicious of its aims. To them city planning immediately suggests visions of many-columned monumental buildings placed on impossibly wide streets, a vision with no very real appeal to them, and one to be realized only at the cost of wholesale

condemnation and ruinous taxes. What is needed to make the great mass of us enthusiastic over city planning is merely a clearer notion of what modern city planning aims to do.

The modern movement is one of the finest and most promising results of the socialization of consciousness. It is not a matter of fanciful schemes with formal beauty as their end; it is a matter which touches every side of human life and endeavour, and is based on the sanest and most practical scientific principles we know. The city planning of to-day is, like the best modern architecture, merely an attempt to solve all the practical structural problems which the modern city offers, in the best and most beautiful way. It has as its aim a healthy, efficient, and beautiful city, to be gained by the gradual elimination of as many of the mistakes of the past as possible in cities already existing, and the careful planning of future developments, with an eye to means of communication, water supply, drainage, suitability to the site, and beauty.

In those bustling, booming days when American industrialism and commerce were growing with mushroom rapidity, and cities were spring-

ing up all over the country, little thought was given to their planning. The city fathers merely laid out a criss-cross of streets, all at right angles to each other; the real-estate promoters got hold of as much as they could, and speculation and chaos were the inevitable results. Buildings went up here and there, with no correlation, and each landowner built exactly what he pleased, wherever he pleased. Fads and fashions boomed now one portion of the town, now another; residential areas became business areas; business areas faded and died away into emptiness; factories were built in places where they spoiled promising residential developments. Cut-throat speculation and competition followed no ideal, recognized no checks. The resultant chaotic inefficiency of such a city is amazing, and it is a characteristic all too universal in this country. Under any such anarchy real estate becomes a questionable investment, for real estate values soar and die unaccountably. The scattering of business and manufacturing makes a great deal of trucking necessary that might easily have been avoided. It necessitates an endless loss of time and money in the ordinary run of the day's work.

Furthermore, when once business and residential areas have become somewhat settled, the American policy of allowing anyone to do what he wants with his property enables owners to build the great many-floored skyscrapers of our cities, buildings which are often unsound economically, for so few of them earn an income large enough to justify their cost, and which often add immeasurably to the congestion of the streets whose light and air they obstruct, and to the fearful crowding of all means of communication.

Little by little order is beginning to grow out of this chaos of our American cities. Many of them have permanent town-planning boards, which are continually looking for places where changes are necessary, taking traffic censuses to find out by actual count where street congestion occurs, and trying to find means of remedy; pressing all sorts of housing and building reforms; plotting new transit facilities so as best to serve the whole city, and planning new developments with an eye to the future. They are considering always the acquisition of new park spaces, and planning park systems in such a way that every portion of the city may have its

share of greenness and open sky; they are striving to meet the insistent demands of hordes of children for ever more numerous playgrounds. Moreover, the city planners have a keen eye to the connection of the city with the outside world. They note the position of its railroads or its main highways, and try to arrange for manufacturing districts and wholesale markets in connection with terminal schemes. If the city is on the ocean, or a navigable river or lake, they attempt to develop its port facilities in the most efficient possible way, coupling them up with railroad or warehouse or market, and, at the same time, arranging some means by which the population of the city may enjoy the peace and quietness and cool breezes which large bodies of water always produce. In a word, modern city planning is concerned with every single feature of city life, housing, water supply, food supply, drainage, railroads, port facilities, amusements, recreation, means of transit, streets, parks, and so on; so that there is not one of us but derives benefit from the city planner's work.

But because architecture can never forget that it is an art, city planning can never lose

sight of æsthetic values, and every question is considered from a double viewpoint. The good city planner forgets neither his sewers nor his views and vistas, and he designs his parks as well as his docks, for only by the combining of the useful and the beautiful can the ideal city arise.

For the ideal city has begun to arise, out of the grimness of our thoughtless ill-designed past, like a phœnix. The work is going on quietly, and still slowly, for it is hampered by the jealous individualism of our conservative democracy, which can see in movements for the common weal only attacks on its liberty. Nevertheless, it has made great strides which have proved its success. A drive around the park system of Chicago is a revelation; the busy, happy playgrounds, the great parks, the miles of parkway thrill even the coolest observer. So the gradual changes in Boston, the development of the Fenway, of the Charles River basin, of the Metropolitan parks outside the city, of the increasing use of the great waterfront, are but symptoms of a movement which is destined ultimately to permeate the whole land. Cincinnati, Detroit, Minneapolis, Madi-

son—they are all beginning to appreciate the virtues of a planned city, and are striving in some measure to realize the true ideals of what a city might be.

And it is right that our American cities should do this, ever with more increasing speed, and in more increasing numbers. The founders of some of our older cities had a wisdom that we are beginning to appreciate only now; for in their city plans they strove to embody all they knew of what a city needed. Penn's original plan for Philadelphia, for instance, called for one parked square to every five or six blocks. He realized the value of open spaces and green in cities, and it is a tragedy hard to understand that his plan and his ideal were so soon forgotten. It is equally strange and equally unfortunate that Major L'Enfant's plan for Washington, with its radial streets and its squares and circles, exerted so little influence on the design of later streets, for the dreary monotony of miles on miles of checker-boarded streets, those running in one way all numbered, all the others lettered, is extremely fatiguing; it produces a city without variety or opportunities of true self-expression. Better by far

the cow paths of Boston than the gridiron of Lincoln or Omaha!

The American cities have still far to go before the ideal is realized, but we may well be glad that a beginning has been made. There are three chief objections which obstruct its realization. One is the innate conservatism of a powerful portion of the population, the second is the refusal of the people to accept the principle of "excess condemnation," and the third is the lamentable inefficiency of many of our city administrations. The first objection is gradually disintegrating under the effects of education; the second is still powerful. By the principle of excess condemnation, a city which desires to make any improvement may condemn not only the land actually required by the improvement, but an additional strip all around, which it may either sell, or lease, or develop in some other way when the improvement has been made. That is, it permits the city to help to finance any improvements by the actual profits which the improvement produces, and at the same time it gives the city a certain amount of jurisdiction over the character and artistic style of buildings to be built adjoining it. This power

at once enables a city to do infinitely more than our American cities are at the present capable of doing; and it is the secret behind the great achievements of European city planning compared with our own. The wonder is not that we are behind Europe in city building and city planning, the wonder is, that without this great financial and æsthetic aid our cities have accomplished as much as they have.

There is still one minor feature of city planning to be considered briefly, a feature with regard to which many of our architects may be found wanting. That is the matter of the harmony of city architecture. Each architect is tempted to design a city building purely with regard to itself, to his tastes, and to his client's needs. The result is the hodge podge of our American city streets, with their jagged sky lines and their warring details. In some ways this condition is the inevitable result of the uncertain condition of affairs in our cities, for no man will spend money and time and sacrifice personal whims to make his buildings harmonize with the buildings on either side, only to have his neighbours' buildings torn down and replaced by others utterly different. Under a

NEW OFFICE BUILDING, NEW YORK CITY

An all too rare example of a building designed with regard to its neighbours. In style it recalls the house at the left; by its use of restful plain surfaces it serves as a transition to the church at the right.

saner system which guaranteed some prospect of permanent character to a specific locality, by limiting building heights, or by specifying the type of building to be built, we might see more regard paid to architectural harmony between neighbouring buildings. The quiet Georgian houses in parts of west central London, with their dignified pilastered fronts facing on quiet squares, are delightfully restful in effect; so are places in our own country, like Forest Hills Gardens on Long Island, or some of the newer suburbs of Baltimore or Philadelphia, just because in them there has been a definite and successful attempt to obtain an architectural harmony, a harmony possible only because in every one of these cases some measure of permanence for the building was guaranteed.

This harmony is too beautiful and valuable an ideal to be entirely abandoned, however, under any condition. The Plate opposite page 330 is an illustration of a remarkably successful attempt to obtain harmony in New York City, to mediate between the exuberant Francis the First style of the house on the left, and the strong Gothic of the church on the right. The designer of these two office buildings might well

have given up the task, but he persevered and produced a finished product, not only beautiful in itself, but in harmony with the divergent buildings on either side. It is an experiment whose success justifies more imitation than it has received, and we owe a great deal of credit to both owner and architect for realizing the true responsibilities of city building in a way that is all to uncommon. Their archtitecture reveals that they, at least, have attained in some measure a civic consciousness.

Architecture, then, has been true to life, for architecture has reflected the socialization of consciousness, which is such an outstanding fact of these days. And not only has architecture reflected this movement, but it has been of unique service to it in three different ways. Architecture has been able to fill the practical needs of the people; architecture has been able to give us ideals of better and finer cities than any we know; architecture has been the creator of an infinite amount of concrete and palpable beauty to enrich the popular life. Engineering can build us factories of a kind, and schools and churches of a kind; sanitary science can keep us in bodily health; painting and sculpture and

music can give us the poignant delight of beauty; but it is the art of architecture alone which takes the engineering and the sanitation, and all the rich beauty of the past, and is able to synthesize them into noble buildings and noble cities which are alike mechanically efficient, and spiritually inspirations for all time.

EPILOGUE

You will recall that it has been stated several times that architecture was an emotional art. It is always necessary to keep this in mind, for since architecture excites principally the more formless and vaguer emotions, there is a strong temptation to forget the emotional appeal altogether, and to regard it as something purely intellectual. Any such attitude is to be avoided, as it will lead to an appreciation of architecture at best one-sided, and true appreciation is never that. A true appreciation of architecture can only come to one who studies it with an eager sympathy, and with all sides of his nature alert and receptive. He must blind himself neither to the intellectual nor the emotional aspect of the art: he should consider structure, planning, and abstract beauty, but at the same time he should preserve an attitude

keenly alive to the emotional message which the art may bring. The value of such an attitude is more than personal, for it will react inevitably upon the standard of popular taste, and thus eventually upon the art of architecture itself; and the greater the number of persons who adopt such a thoughtful, sensitive attitude, the sooner the day will come when architecture shall regain the throne due to what Reginald Blomfield so aptly terms the "Mistress Art."

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Index

A.

Agra, Taj Mahal at....89
Albany, Cathedral....118
State Education Building at....199, 203
Amiens, Cathedral....8, 48, 56, 62
Cathedral (plan, illustration)....248
Arc de Triomphe, Paris....321
Architecture,
Appeal of....3ff
Decorative Materials of....137ff
Effect on Life....315ff
Laws of Form in....29ff
Materials of....73ff
Social Value of....298ff
Architrave....95
Aristotle....31
Athens,
Monument of Lysikrates....25
Parthenon....8, 42, 173
Theseum....42
Axis....228ff

B.

Bacon, Francis....103
Balance....41ff
Baltimore, Suburbs of....331
Beauty, Social Effect of....315ff
Birmingham....308
Blois, Château (cornice, illustration)....159
Boston....329
Park Development....327
Public Library....22, 66, 69, 132, 151, 243
Brooklyn Bridge....21
Brunelleschi....180
Bureau of Printing and Engraving, Washington, D. C....42
Burghley House....107

C.

Cambridge, England, King's College Chapel in.....101, 131
Cambridge, Mass., Craigie House in.....46
Cantoria, from the Cathedral, Florence.....193
Capitals,
Early Cypriote Ionic Capital (illustration).....275
French Gothic Capitals (illustration).....179
from Southwell Minster (illustration).....177
Capitol, Washington, D. C.....8, 32, 35, 46, 59, 67, 70, 89, 286
Missouri State, Jefferson City, Mo. (plan, illustration).236
of Virginia, Richmond, Va.....286
Carcassonne, Cathedral of St. Nazaire.....101
(illustration).....100
Ceilings.....117ff
Centre of Interest (Climax).....66ff
Chambre des Députés, Paris.....321
Champs Élysées, Paris.....321
Charles VIII.....279
Charlottesville, University of Virginia.....286
Chartres, Cathedral.....48, 50
Chenonceaux, Château.....87
Chicago, Ill., Park System of.....327
Chimneys.....105ff
Cincinnati, Ohio.....327
City Planning.....319ff
Climax (Center of Interest).....66ff
Coleridge, S. T. (quoted).....89
Cologne, Cathedral.....45
Columbia University, New York City.....87
Library.....22, 89
Colosseum, Rome.....21, 56, 199, 202
Complexity (Variety).....37
Constantinople.....97
Santa (Hagia) Sophia.....89, 114, 127, 176
Cornice.....156ff
Classic (illustration).....147
of Wing of Francis I at Blois (illustration).....159

D.

Decorative Use of Structural Members.....198ff
Detroit, Mich.....327
Dome.....87ff, 125ff
(illustration).....130
Doors.....91ff
Spanish.....97, 212
Ducal Palace, Venice.....116
Duncan House, Newport, R. I.....166

E.

École des Beaux Arts....293
Eddy, Mary Baker G., Memorial....169
Egypt, Mouldings used in....144
Decoration in....170
Ely, Cathedral....150
Erectheum, Athens....150
Essen, Krupp Villages near....311
Ethical Culture Meeting House, New York City....80
Excess Condemnation....329
Expositions, San Diego....98
San Francisco....23

F.

Fiesole, Mino da....180
Floors....116ff
Florence, Cantoria from Cathedral at....193
Palazzo Davanzati....120
Pazzi Chapel....180
Riccardi Palace....157
San Miniato....118
Forest Hills Gardens, L. I....331
Form, Laws of....29ff
Francis I....279, 280, 281, 282, 293
Wing of, at Blois (illustration)....159

G.

Gambrel Roofs (illustration)....84
Glasgow....308
Gothic Ribbed Vault (illustration)....129
Grand Central Station, New York City....214
Greek Style, Development of....272ff

H.

Hampstead Garden Suburb....311
Hampton Court Palace (near London)....77, 118
Harmony, Law of....63ff
Harvard House, Stratford on Avon (illustration)....102
Henry IV....281, 319
Hipped Roofs (illustration)....86
Housing Conditions....306ff
Improvements in....308

I.

Ionic Cypriote Capital (illustration)....275

J.

Jefferson City, Mo., State Capitol Plan....236
Jefferson, Thomas....286, 288
Jones, Inigo....285

K.

Karnak, Temples at....21
Temple gateway at (illustration)....145
Kennebunk, Maine—Old House at (illustrated)....84
King's College Chapel, Cambridge....101, 131
Krupp Villages (near Essen)....311

L.

Leeds....308
Lemercier....320
L'Enfant, Major....286, 320, 328
Les Invalides, Paris....127
Lincoln, Cathedral....130, 150
Lincoln, Neb....329
Lion Gate, Mycenæ....92
London....36, 308
Georgian Houses in....331
Hampton Court Palace....77, 118
Henry VII Chapel, Westminster Abbey....131
National Gallery....35, 48, 88
St. Paul's Cathedral....89, 127, 132, 198
Westminster Abbey....21
Westminster Hall....118
Lord and Taylor, Store, New York City....104
Library, Boston....22, 66, 69, 132, 151, 243
New York City L....123
Louis XI....281
Louis XII....279
Louis XVI....293
Louvre, Paris....46, 70, 199, 203, 204

M.

Madeleine, Paris....321
Madison, Wis....327
Manhattan Island (silhouette of)....12, 15
Metropolitan Museum of Art, New York City....46
Metropolitan Tower, New York City....91
Michelangelo....180
Minneapolis, Minn....327
Art Museum....46
Missouri, State Capitol (plan, illustration)....236

Monticello, Va.....47
Monument of Lysikrates, Athens.....25
Mosques, Doors of.....97
Mouldings 141ff
Illustration 143
Decorated 152
Decorated (illustration).....153
Mycenæ, Lion Gate at.....92

N.

National Gallery, London.....35, 48, 88
New Haven, Conn., House in (illustration).....232
Yale University Dining Hall.....118
Newport, R. I., Duncan House in.....166
Newton Hall, near Cambridge, England (illustration).....86
New York, silhouette of.....12, 15
Brooklyn Bridge.....21
Columbia University.....87
Columbia University Library.....22, 89
Ethical Culture Meeting House.....80
Grand Central Station.....214
Lord and Taylor Store.....104
Metropolitan Museum of Art.....46
Metropolitan Tower.....91
Pennsylvania Station (interior of).....25, 119
Post Office.....42, 43, 47, 67, 70, 203
Public Library.....123
Saint Patrick's Cathedral.....45, 47
Saint Paul's Church.....35
Trinity Church.....287
Union Theological Seminary Chapel.....118
New York, State Education Building (Albany).....199, 203
Notre Dame, Cathedral of, Paris.....24, 45, 77, 101, 163, 217

O.

Omaha 329
Opéra, Paris.....242
Ornament 137ff
Amount of.....207ff
Kind of.....212ff
Non-representational 140ff
Placing of.....209ff
Representational 166ff
Size of.....213ff
Suitability to Material.....187ff

Suitability to Medium....190ff
Suitability to Purpose of Building....191ff
Terra Cotta....195ff

P.

Palladio....287
Palazzo Davanzati, Florence....120
Vendramini, Venice....42, 47
Panthéon, Paris....127
Pantheon, Rome....94, 126, 127
Paris,
Arc de Triomphe....321
Chambre des Députés....321
Champs Élysées....321
École des Beaux Art....293
Les Invalides....127
Louvre....46, 70, 199, 203, 204
Madeleine....321
Notre Dame, Cathedral of....24, 45, 77, 101, 163, 217
Opéra....242
Panthéon....127
Place de la Concorde....321, 322
Sorbonne....88
Saint Eustache....65
Trocadero....321
Parthenon, Athens....8, 42, 173
Pater, Walter (quoted, School of Giorgione)....18
Pazzi Chapel, Florence....180
Pendentive (illustration)....130
Penn, Sir W....328
Pennsylvania Station, New York City....25, 119
Philadelphia....69, 328
Centennial Exposition, 1876....288
Suburbs of....331
Piers....133ff
Place de la Concorde, Paris....321, 322
Planning....220ff
Amiens Cathedral (illustration)....248
City....319ff
House in New Haven (illustration)....232
Missouri State Capitol (illustration)....236
Steel, Effect of....245ff
Washington, D. C., Plan of Major L'Enfant....328
Portsmouth, N. H....69
Warner House....85
Post Office, New York City....42, 43, 47, 67, 70, 203

Proportion 61ff
Public Library,
Boston 22, 66, 69, 132, 151, 243
New York City 123

R.

Rheims, Cathedral 21
Rhythm 55ff
Riccardi Palace, Florence 157
Richelieu, Cardinal 320
Village of 320
Richmond, Virginia, Old Capitol at 286
Robbia, Andrea della 197
Luca della 193, 197
Rome, Colosseum 21, 56, 199, 202
Pantheon 94, 126, 127
Santa Maria della Pace 134, 135
St. Peter's 24, 25, 68, 89, 127, 132, 200, 213, 214, 215, 216, 218
Tabularium 199
Villa Madama 132
Roofs 81ff
Gambrel (illustration) 84
Hipped (illustration) 86
Rouen, Cathedral 50
Ruskin, John 138, 167, 220
(quoted) 302, 303, 318

S.

Saint Eustache, Paris 65
Saint Mark's, Venice 24
Saint Nazaire, Carcassonne 101
(illustration) 100
Saint Patrick's, New York City 45, 47
Saint Paul's, London 89, 127, 132, 198
Saint Paul's, New York 35
Saint Peter's, Rome .....
..... 24, 25, 68, 89, 127, 132, 200, 213, 214, 215, 216, 218
Salem, Mass. 69
San Diego Exposition 98
Railroad Station 295
San Francisco Exposition 23
San Miniato, Florence 118
Santa Maria dei Miracoli, Venice 114
Santa Maria della Pace, Rome 134, 135
Santa (Hagia) Sophia, Constantinople 89, 114, 127, 176
Schlaun, Johann Conrad 293

Settignano, Desiderio da....180
Shirley, Virginia....47
Sorbonne, Paris....88
Southwell, Minster (Capitals, illustration)....177
Springfield, Mass., Court House....235
Steel, Effect of, on Planning....245ff, 270
Stevenson, Robert Louis....58
Stonehenge....37
Stratford on Avon, Harvard House (illustration)....102
Style,
Development of, American....284ff
Development of, French Renaissance....279ff
Development of, Greek....272ff
Development of, Roman....277ff
Effect of Steel on....270
Meaning of....263ff
Suburbs....310ff
of Baltimore....331
Hampstead Garden....311
Model....311
of Philadelphia....331
Symonds, J. A. (quoted)....57

T.

Tabularium, Rome....199
Taj Mahal, Agra....89
Temple of Theseus (Theseum), Athens....42
Thebes, Temples at....21
Terra Cotta....195ff
Tracery....101
Trinity Church, New York City....287
Trocadéro, Paris....321

U.

Union Theological Seminary Chapel, New York City....118
Unity....31ff

V.

Value, Social, of Architecture....298ff
Variety (Complexity)....37ff
Vaults....123ff
Gothic Ribbed (illustration)....129
of King's College Chapel, Cambridge....131
Vendramini Palace, Venice....42, 47, 61, 200

Venice, Saint Mark's....24
Santa Maria dei Miracoli....114
Vendramini Palace....42, 47, 61, 200
Villa Madama, Rome....132
Virginia, Old State Capitol, Richmond....286
University of, Charlottesville....286

W.

Walls....75ff
Interior Treatment of....113ff
Warner House, Portsmouth, N. H....85
Washington, D. C., Bureau of Printing and Engraving....42
Capitol....8, 32, 35, 46, 59, 67, 70, 89, 286
Housing in....312
Major L'Enfant's Plan of....286, 320, 328
White House....59
Washington, George....286, 320, 328
Westminster Abbey....21
Hall....118
Henry VII Chapel....131
White House, Washington, D. C....59
Windows....98ff
Wood Panelling....114, 115
Woolworth Building, New York City....91
Wren, Sir Christopher....285, 319
(quoted)....296

Y.

Yale University, Dining Hall, New Haven, Conn....118
York, Minster....101